NEDA Quarterly

North East Digital Association

Devoted to Packet Networking in the North East

Volume 5 | **Issue #1** | **April 1999**

Editor's Column

Welcome to the Quarterly. This issue is mostly concerned with learning about FlexNET. This is a follow up to one of last year's issues. At some point we'll put together a review of FlexNET based on what we've learned over the past year of experimentation. Stay tuned.

One of the articles in this issue is a translation of the RMNC3 FlexNET hardware kit manuals. If you were to buy the RMNC3 boards you'd get the German version. What we've printed in this issue will be valuable to those choosing the RMNC hardware to implement FlexNET. If anybody were to print that article, it would probably be NEDA. Who better?

Another large article in this issue is a FlexNET Command list. This list is available in many downloadable forms but none of those forms specifically address the FlexNET commands that are used on the Intel MSDOS PC version of FlexNET. This article does. Further, the common versions of the command list separate out the User version of the command list, from the Sysop Only version of the list. A much more handy form would be to group the commands, because many of our readers are going to be the sysops, trying to learn and configure the FlexNet software.

About the name of this magazine: "Quarterly"

This magazine is edited by KA2DEW. We renamed the club magazine back to "Quarterly" at the January 1999 board of directors meeting. This is the name our club used for it's magazine for it's first 4 years of existence. I was the editor for NEDA for ten of the thirteen NEDA Quarterlies. Dana, WA2WNI helped quite a bit on those issues. I helped Dana with the three he edited also. During those first four years we also put out a magazine called the NEDA Annual.

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Inside the Report

NEDA Quarterly, Volume 5 Number 1

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Please do what you can to promote our club. We can do better looking magazines if we get our numbers up! Also send questions, article ideas to the editor or club postal address. We can use anything related to packet radio networking. VHF

Editor's Column from page 1

During the next five years, 1994-1998 the club was responsible for three magazines, the NEDA Maps, NEDA Journal, and NEDA Report. The club chose to break up the magazine effort in order to spread the work around. There were no volunteers who could consistently put out the complete magazine in one effort.

Cal, W1JFP edited most of the NEDA Reports (I think there were 14 issues) with Don, N2IRZ, and me, KA2DEW editing a couple each. We also had one NEDA Journal edited by Paul, N2LSS and a NEDA Maps by N2IRZ. The plan had been to put administrative material in the NEDA Report, maps in the NEDA Maps, and technical literature in the NEDA Journal. In practice the NEDA Report ended up containing both administrative data and technical literature. The Maps were published as part of the Report once.

So, in our first 9 and 1/3 years our club has put out several versions of the original membership package; 13 Quarterlies (not including this one); 1 TheNET special; 3 Annuals

Thereafter we broke up the Quarterly into Report, Journal and Maps: 14 Reports; 1 Journal; 1 Maps

As you can see, the break up of the Quarterly didn't really spread the work around as was intended. In practice the Report editor tended to be doing *all* of the editing anyway. So... I asked to have the magazine renamed "NEDA Quarterly."

In other news: We just completed a dunning letter mailing to all of the former members of the club and have gotten positive feedback. Our membership is growing.

FlexNet and Xnet look very interesting. FlexNet includes the ability to use an off-the-shelf MSWindows95 PC as a packet station using the sound-blaster card as your TNC. It may also be used on a MSDOS computer as a packet node machine using standard TNC2s or running on it's own hardware that looks like a set of jumbo TNCs in a card cage (RMNC3.) Xnet runs on another new TNC called TNC3. Look for more articles on Xnet here as the documentation gets translated.

–KA2DEW - NEDA Editor

1999 NEDA Officers and Appointees

As of Feb 1999

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** Ray Feeley	K1CSB	@K1MEA.ma
**Tadd Torborg	KA2DEW	@W1UU.ma
++John Driscoll	N2MKH	@N2UBH.ny
++Bob Seger	WB2QBQ	
++Dana Jonas	WA2WNI	

** Term expires first meeting 2000
++ Term expires first meeting 2001

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NH & E. MA	Cal Stiles	W1JFP@W1JFP
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E-mail me at **ka2dew@torborg.com** or on packet **ka2dew@wb1dsw.nh**. I have a personal web page at **http://www.torborg.com/ka2dew.** Please use these addresses to send me articles as well.

Minutes of Jan 1999 Tech Committee Meeting

Depot Restaurant, Northampton MA
Meeting called to order at 9:45am, 1/31/1999
Don Rotolo N2IRZ presiding as Tech Committee Chair

Attending:

Burt Lang	VE2BMQ
Bob Stevenson	K1UOL
Rocco Grosso	KD1RY
Pete Butler	W1UU
Warren Whelan	WB2ONA
John Romano	N2NSA
John Papson	WB2CIK
Tadd Torborg	KA2DEW
Jim Wzorek	K1MEA
John Driscoll	W2MKH
Bob Seger	WB2QBQ
Don Rotolo	N2IRZ
Dana Jonas	WA2WNI
Bob Seastream	WB2DWD
Bob Anderson	K2BJG

A bunch of visitors from NYC, CT, NJ and LI regions.

A map of the NY Metro Packet network shows extensive connectivity in the region. Much of this region is now using FlexNet

FlexNet does not limit its table to 3 hops. It will show any site that is connectable, and it automatically checks connectivity to destinations on its table. If a Destination shows in a D table, you can reach it. There should no longer be "one way" links. Round trip time is measured to each destination and the best route is automatically used.

Parameters are automatically adjusted for traffic loading and propagation conditions. Maxframe will go as high as 7 if the link is working well. TxDelay is not adjusted, this must be done by the sysop. No SYSOP intervention is needed "or allowed".

Some similar commands are:

- Help,
- Info,

Some different commands are:

- Node is now called a Digi
- <N>odes are now <D>estinations
- <R>outes are now <L>inks
- <B>ye is now <Q>uit
- The B command will render the <B>eacon text

New commands are:

- <F>ind
- <A>dvice
- <C>onference
- <T>alk

Tech Committee - Continued on page 17

Minutes of Jan 1999 Board Meeting

Depot Restaurant, Northampton MA
Meeting began 12:52pm, 1/31/1999
Tadd called the meeting to order as the person holding an agenda.

Attendance

Jim said that he had invited several guests to the meeting.

Jim Wzorek	K1MEA - ***Board Member***
Bob Stevenson	K1UOL - (guest)
Rocco Grosso	KD1RY - (guest)
Warren Whelan	WB2ONA - (guest)
John Romano	N2NSA - (guest)
Burt Lang	VE2BMQ
Pete Butler	W1UU
John Papson	WB2CIK
Tadd Torborg	KA2DEW - ***Board Member***
John Driscoll	W2MKH
Bob Seger	WB2QBQ - ***Board Member***
Don Rotolo	N2IRZ
Dana Jonas	WA2WNI - ***Board Member***
Bob Seastream	WB2DWD
Bob Anderson	K2BJG

General discussion about the health of the club. The people closest to the microphone were generally in agreement that the club wasn't going to go away soon.

Dana wasn't playing good.

Bob (K2BJG) noticed that he wasn't in the database. Bob (DWD) says that he remembers getting BJG's application but that it indeed missing. Tadd says that Bob (DWD) will have to go back through the applications he's received since taking the job last November and make sure they are all in the database. DWD says "I weep."

Chairman of the Meeting

Tadd pointed out that during the first couple of years of the organization that the Chairman for each meeting

Board Meeting Minutes - Continued on page 54

Bob Seger - WB2QBQ is NEDA's treasurer. Bob has been an officer of the club for half a decade and was sysop of the KNOX node, living just west of Albany, NY.

Making a FlexNet node, What does it take?

The easy answer to that question is that you need the FlexNet software, an Intel MSDOS PC, and some TNCs or modems.

FlexNet software

Most of the software can be down loaded via the World Wide Web. One of the pieces that you need must be asked for via e-mail. The authors like to keep track of how many copies are out there and to make sure that they are used for Amateur Radio purposes only.

TNCs

The TNC should be TAPR TNC2 compatible to make this easiest. MFJ 1270, 1270B, PacCom Tiny 2, Micropower 2, AEA PK87, MFJ TNC2, or DRSI DPK1200 are common and will work perfectly. Others can be used by with more difficulty.

MSDOS PC

The PC should be an 80286 or better with a good HD, 20MB or so is overkill but you're not likely to find a working one that's smaller, 640K of RAM, a couple of serial ports, a display, keyboard, and floppy.

Knowhow

I've been putting together a web site with information on this subject. It's really not hard, it just takes more room to describe than one column. When space permits in future Quarterlies I'll elaborate on this. Check my web site at:

http://www.torborg.com/neda

FlexNet is easy. It's easier to operate than TheNET. Have fun!

—Tadd, KA2DEW

Using FlexNet from a TheNET node

As the number of FlexNet nodes grows, we often hear of hams who think half the network has disappeared, since FlexNet nodes don't show in the Nodes list. Even worse, a TheNET node on the other side of the new FlexNet node won't show on the local nodes list. What's really happened is that FlexNet and TheNET are not compatible on the network level – they don't share nodes lists – but they certainly can still talk to each other. This brief article will help those of you who are coming into the FlexNet network from a TheNET node.

Ideally, you should first seek a FlexNet node that you can connect to directly. If there is one, the best way to experience FlexNet is with a direct connection. The next best thing is to read the bulletins on the local BBS which explain which FlexNet nodes are accessible from which TheNET nodes. Have a look at the Info message on the node – you never know. This issue of the NEDA Quarterly has some maps which might help. But, assuming the worst case – the BBS is on FlexNet or otherwise unreachable, or the Sysop never posts network status bulletins – here's some things to try.

The first step is to connect to your local TheNET node. Have a look at the Nodes list, maybe the Routes list, and try to figure out what's missing. You might be able to figure out the callsign of the new neighboring FlexNet node, as it is very likely to have the same callsign as it did when it was a TheNET. Note that FlexNet uses only callsigns, never a mnemonic (such as CHATHM).

Have a look at the Heard lists on the backbone ports. A FlexNet node will beacon every 10 minutes with its callsign. Only user ports have an SSID – true backbone ports cannot be connected to – but the FlexNet node op knows (hopefully) that he has to set an SSID on the backbone ports that look out at TheNET nodes. Be sure to check the Heard lists on all of the TheNET ports at the node site. You can get a list of which other ports are at the site with a Routes command, and look for the nodes on 'port 1' – those on 'port 0' are on the radio side of the node.

You can also look for a lot of traffic heading to a specific callsign by examining the Stats listing. This TheNET X1 feature measures the traffic every 10 minutes and makes busy nodes easy to spot.

As an almost last resort, make a phone call to someone! The very last resort is to try connecting to callsigns at random from the TheNET backbone port that faces the FlexNet node (formerly faced the now missing TheNET node.)

When you connect to a Flexnet, you get the welcome banner, which is a fairly obvious sign that you've made it. Try the Help command for info on how to use FlexNet, or see the command table article later in this issue.

Good luck, and be sure to write and tell us what you've learned and how you made out.

—N2IRZ

TAPR Compact Flash Interface

Some digital cameras have expandable storage options. One of the two common memory card formats for digital cameras is called "compact flash." Memory cards in this format come in sizes larger than 30MB and costing on the order of $10 per megabyte. They use flash memory and may be programmed over and over again. When used on a MSDOS computer they can be formatted to look like a hard drive.

Tucson Amateur Packet Radio club (TAPR) has a product they call *TAPR Compact Flash Adapter*. This product, which sells to nonmembers for $60, allows a compact-flash card to be used as an IDE hard disk.

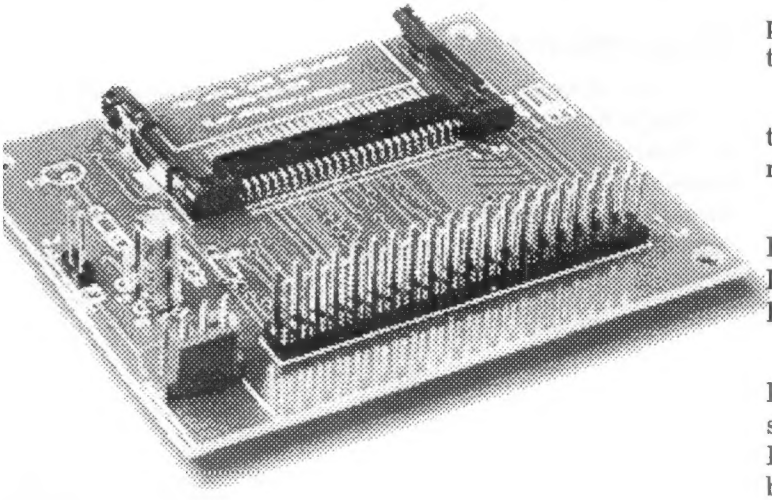
For more information or to order

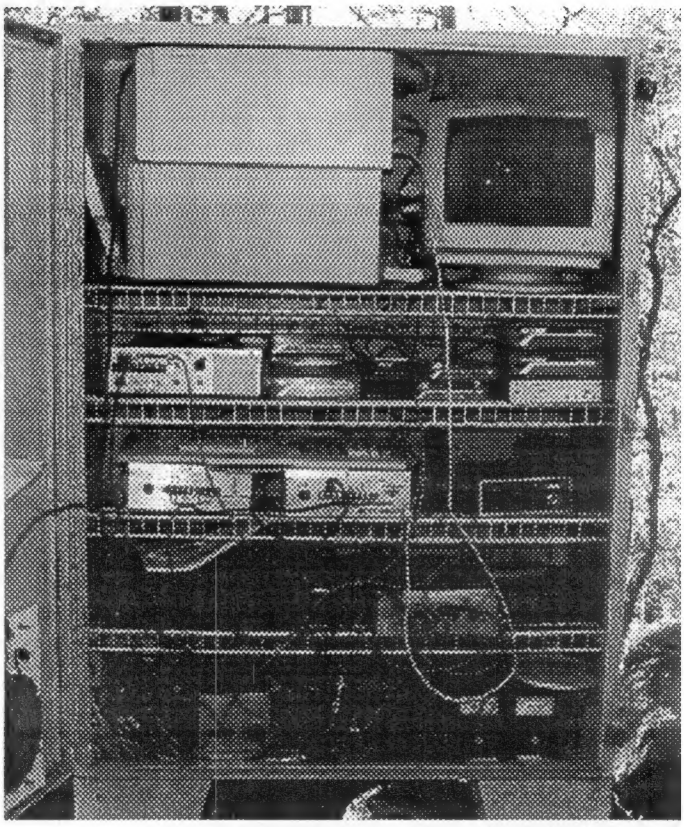
web site: http://www.tapr.org
e-mail at tapr@tapr.org,
phone (940) 383-0000,
fax (940) 566-2544.

Application

A complete bootable FlexNet system could be constructed for about $100 plus the price of the computer. With a junk 386 PC, 12v in 5v/-12 output power supply, keyboard, and one of these card readers+card, one could make a 12v powered solid state FlexNet box for about $200. Look for a motherboard/processor that does not use a cooling fan. This will be a good sign that the machine will run with less power consumption. You can run a stand-alone FlexNet system (no BBS) in 640K easily and get by with a 2MB flashcard. Get the 4MB model to allow for future expansion.

—KA2DEW





Ramapo Mtn, Oakland, Bergen Cty, NJ

The relay rack above houses the WA2SNA FlexNet node and TCP/IP router. It also houses several TNCs and associated radios.

The computers are the WA2SNA FlexNet node, and the IPNEJ.AMPR.ORG machine running MFNOS. The callsign is WA2SNA-1 and the IP address is 44.64.8.2.

There is only one monitor and keyboard. It gets plugged into whichever computer needs diagnosing when the site is visited.

IPNEJ is currently the gateway between a chunk of the TheNET network and the greater NYC FlexNet IP network.

The picture illustrates that yes, it is possible to run PC's at remote mountain top sites summer and winter. It should dispel any fear of computer problems running PC FlexNet at remote sites.

During the summer cooling is handled in two ways. First, a tarp is hung in the trees as a sun shield, and second, two door fans on thermostats move some air. During the winter insulation is added, the vents are blocked off, and two 40watt incandescent 110watt bulbs on thermostats hold the temperature above 40 degrees (usually between 55 and 60).

—K2BJG

FlexNet Commands

The FlexNet software running in an Intel PC has a command set that is marginally different than the RMNC FlexNet. Since most of the documentation available for FlexNet is for the RMNC version, and since by far most FlexNet nodes in the U.S. are PC-FlexNet, I started creating documentation for PC-FlexNet. This part is the Sysop's Command list. This should help people to get started with building and operating their own FlexNet nodes.

In later issues of the Quarterly I hope to have additional information. I am compiling this information as well as hints and node building tips on my web site at **http://www.torborg.com/neda**.

Some of this information is drawn directly from documents provided by Gunter Jost DK7WJ/AC5APC. That information is reproduced with permission. If you choose to copy this information please copy the entire FlexNet command article including this block:

PC/FlexNet V3.3e (C)1990-1995 G.Jost DK7WJ/AC5FC
Nur fur nichtkommerzielle Anwendungen in Ameteurfunk lizenziert
Only for usage in noncommercial applications for amateur radio
Seulement pour des applications noncommercial radioamateurs
>>> Siehe/see/voir FLEXDIGI.DOC <<<

Sysop Infobox Commands

These are the commands available to the local console or via sysop authorization.

- A - Latest News - shows text file set by WRITE A
- B - Beacon - display beacon-file set by WRITE-H
- C - Converse - start conversation mode
- C - Call - connect further on
- CAL - Calibrate - sends calibration signal
- D - Destinations - display destination table
- F - Find - Look for user on network
- H - Help - shows test file set by WRITE H
- I - Info - shows text file set by WRITE I
- K - Kill - terminates a user connection
- L - Link - set or display Link information
- LO - Local - shows text file set by WRITE L
- M - Mailbox - Connect to local BBS or assign callsign for local BBS
- MH - MHeard - show users heard on ports
- MY - Mycall - Set or show node's call and ssid range
- MO - Mode - Set or show channel modes
- P - Parameters - display parameters and statistics
- P I <x> set node time-out to <x> minutes
- P S <ssid> <ch> set SSID <ssid> on port <ch>
- Q - Quit - end of connection
- RESET cold reboot
- RESTART warm reboot
- S - Setsearch - display search-paths
- STAT - Statistics - port latency history
- SY - Sysop get sysop authorization
- T - Talk - send text to other user
- U - User - display user table
- W - Write - sets text for various info/help texts

User vs Sysop command sets

User commands are all the commands normal users can access. The sysop has a set of additional commands or may specify additional parameters to normal user commands.

If the node is accessed from the local console, both user and sysop commands are accessible. If accessed remotely across the network, only user commands will be allowed unless the user passes the SYSOP authorization challenge. Note: A particular link may be commanded such that any user connected on that link is automatically enabled to access sysop commands.

This document does not distinguish between User and Sysop commands. In general, any command that affects the settings of a node parameter, data file, link or configuration, is a sysop command.

Nomenclature

In this documentation, <CR> means entering of a Carriage Return, $0D. The "=>" is the system prompt of FlexNET; input is expected now. All input can be made either upper or lower case. If any command other than those listed below is used, the node answers with: "invalid command". Statements inside [] are optional.

A - latest

(see *Latest*)

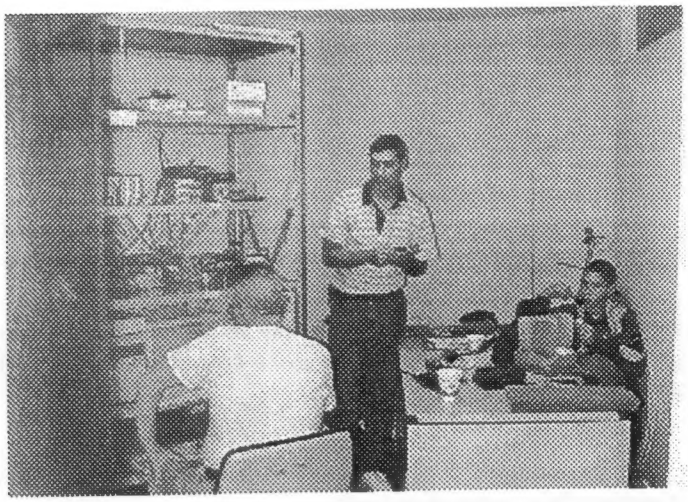
Beacon

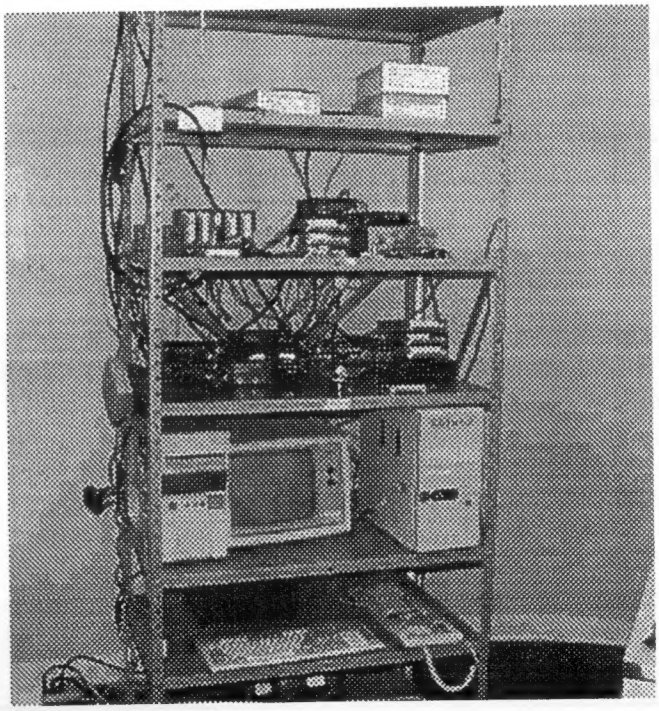
Show Beacon text file

Syntax: B <CR>

The B-Command shows the current beacon file. In this file you can see which beacon is sent on which port in which interval. After a cold reboot the default beacon is sent on port 0 or 1.

The beacon text file is set by the WRITE command.





Calibrate

Send a calibration signal on a specified radio/port/ channel

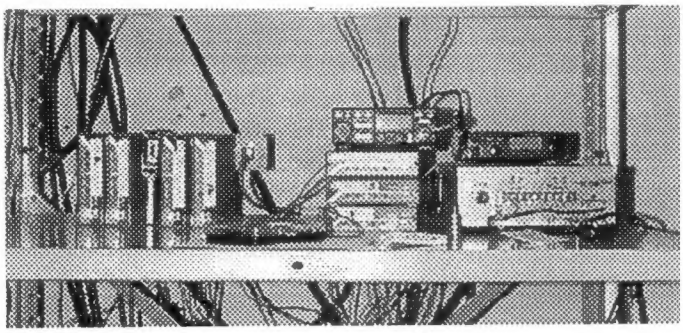
Syntax: CAL <ch> <mins> <CR>

The CALIBRATE-Command turns on the TX of a specified port (parameter <ch>) for one minute. During this time the carrier is modulated by a continuous sequence of 0 and 1, producing a "diddle" tone with a 50:50 ratio.

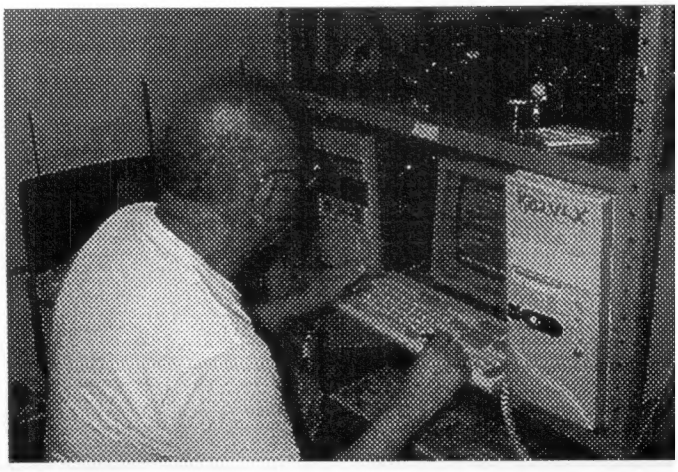
The command is useful in 2 cases: - It makes it possible for the link partner to set his antenna to the right direction. The symmetry of the modulation may be checked and the modem maybe adjusted for best results If there are frames in the buffer, they are sent before the calibration starts. To trigger the PTT watchdog the CAL signal is interrupted every 15 seconds for a short time.

Optionally, the calibration time in minutes may be given. Default is one minute. With the command "CAL <ch> 0" the CAL signal is cancelled.

Continued on next page



N2MEG, N2NSA and KB2VLX sent me a boat load of photos of the Bronx KB2VLX FlexNet node site. In the photos are Bob, K2BJG, and John, N2NSA (and son).
KB2VLX is part of BNXNET (Bronx net)
Web page is http://www.n2meg.ampr.org



Call/Converse

Call a station or another node or enter into converse.

Call syntax: C Call [via] [digi1 digi2...digi8] <CR>
Converse syntax: C<CR>

Call command

The CALL command is used to connect further onwards. The node will try to connect you to the station via the path you specified.

- To confirm your command, you get the message "link setup...".
- As soon as the connection is made, you will get "*** connected to <call>" from the node.
- When the called station did not respond, you get "*** failure with <call>".
- If the called station sends a Busy (DM), the message "*** busy from <call>" is sent to you. The link setup can be interrupted by sending a single <CR> to the node.
- If you see the message "*** can`t connect twice", you have tried to establish a QSO which already exists with the same callsign fields.
- With the C-Command it is also possible to change the user port, if the node has more than one. By typing "C -7" you change to the port with the SSID 7. This is acknowledged by the message "*** <call>: SSID OK".
- If you connect to another station from the node onwards, and that station disconnects you, you will get reconnected to the node. To show you what happened, you get a "*** reconnected to <call>" then.
- A connect request will be denied, if it causes a loop in the network. If, for example, you are connected to DB0KT via DB0ODW, you cannot connect back to DB0ODW nor to other nodes behind DB0ODW. You should quit the QSO with DB0KT then and retry after the reconnect.

Example: (user is connected to DB0HP)

```
=> C DB0ODW <CR>
link setup...
*** connected to DB0ODW
RMNC/FlexNet V3.3d - DB0ODW - JN49 IQ -
Help mit H
=> C DB0HP <CR>
*** DB0ODW: loop detected
=> Q <CR>
73!
*** reconnected to DB0HP
=>
```

Converse command

Go into converse with other hams

If the C command is entered with no parameters, the infobox puts you into converse mode. Using this mode, a great number of stations can have a round table conversation. There are 255 different convers channels available.

After entering the C-Command, you get a list of all stations connected to the node and, if they are in convers mode, too, the channel on which they are. Now the node prompts for a number, which selects the channel you want to join. The user must enter a channel number. If no number is entered, the node puts the user back at the infobox prompt. (See also TALK command)

Example:

```
=>C <CR>
users:
0: DL1AA 0:DL1ZZ : DL2XY 73: DG3FBL 73:
DK7WJ
channel ? 73 <CR>
*** starting convers, exit: /q
```

In this example, DL1AA and DL1ZZ are on channel no. 0 and DG3FBL and DK7WJ on channel 73. DL2XY is connected to the node without being in convers mode. Having given the desired number 73, the conversation starts. All stations logged in onto the chosen channel get the message:

```
"<DL9ABC>: *** Logon"
```

While being in convers mode you have the following commands at your disposal:

"/w" ..... shows all stations connected to the node (with convers channel number if available)
"/c" ..... shows the actual channel number
"/c n" ..... switches to channel n
"/s <call> <msg>" .. sends private msg to <call> only
"/m <call> <msg>". sends private msg to <call> only
"/q" ..... quits convers mode. If a station disconnects while being in convers mode or quits convers mode, all other users of the channel get the message:

```
"<DL9ABC>: *** Logoff"
```

If a user changes to another channel, the users of the left channel get the message:

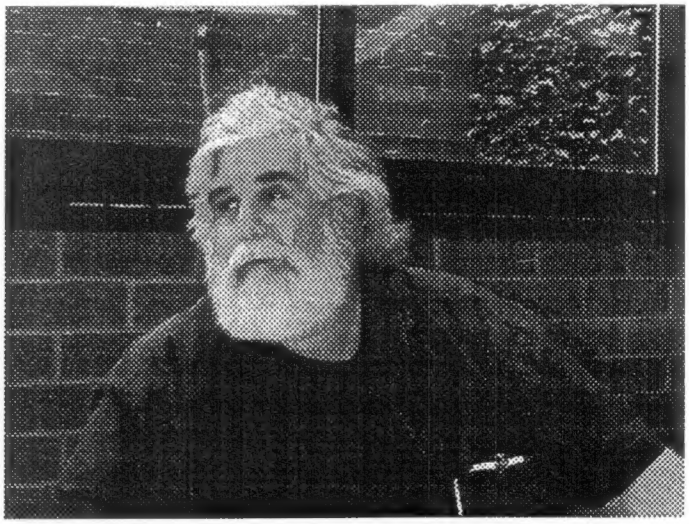
```
"<DL9ABC>: *** switched to channel n"
```

Destinations

List the available destinations

Syntax: D [call] <CR>

The DESTINATIONS command prints out the destination table maintained by the node. In this table all nodes, where the autorouter knows a way to, are shown. For every callsign there are the SSID range of the callsign and the average round trip time in 100 ms steps are shown. As an optional parameter a destination callsign may be given. The node will now try to work out the way to this node and will show it (after some seconds, depending on the (round-trip time). Uppercase callsigns mean that the node knows the FlexNet protocol, lower case callsigns are inserted by the autorouter to reach the next FlexNet node. The characters "???" mean that the previous digi does not know the way to the destination. This may happen when the route to the destination is being reorganized (a very short interval that happens periodically,) or when the destination is not reachable anymore. The "D-Table" is usually the same on all nodes. When round trip times get too high a node will not be shown anymore. Only nodes that you can reach without link loops are shown by default. This reduces link load and has the advantage that you will see only the nodes that are not in your direction. By using the option "*", you will get the complete list. Another possibility is the selective display of a part of the list. By entering "D HB9" for example, you get all destinations starting with "HB9", i.e. the whole Swiss network. Both parameters may be used together. If you type "D * HB9" you will get all Swiss destinations, including these you cannot reach without loops.



John Driscoll, N2MKH
John is from Syracuse NY and has been instrumental in promoting, constructing, operating, and demonstrating Amateur Radio Packet Networking in central New York. John is a NEDA board member.

Find

Find a user station

Syntax: F call <CR>

With the FIND command it is possible to look for a station which is in standby on this or another node. When the F-Command and the callsign are entered, the digi sends UI-frames with the POLL-bit set to this station via some neighbor nodes. Source callsign is the callsign of the OM who issued the FIND command. If the called station hears the frame, it will answer with a DM- Frame. The node analyzes all frames coming back and is able to determine if this was an answer of the FIND command. If this is the case, you will get a message via which node the station was found. If the called station is already connected to the node, no special frame is sent and the user will get the message that the user is QRV on the digi.

Example:

```
=>F DK7WJ <CR>
*** DK7WJ found via DB0ODW
=>
```

Only the node via which the called station was found is put out. It will be known to the autorouter. If the station was not found, a system prompt "=>" appears again. Since the used UI and DM frames may get lost, it is advisable to use the FIND command more than only once to be sure the user is not QRV. Due to the protocol, the SSID of the called station must be known.

Help

Request the text help file from the node

Syntax: H <CR>

The H-Command prints out the text-file HELP. The text can be entered by the sysop only and should give short help text about using the node. After a cold reboot the text is empty. See Write command.

Info

Request the INFO text file from the node

Syntax: I <CR>

The I-Command prints out the text-file INFO. This text can be entered by the sysop using the WRITE command and should provide information about the node (QTH, equipment, antennas and so on). After a cold reboot the text is empty.

Continued on next page

Kill

Kill an existing QSO

Syntax: K <QSO-No> <CR>

The KILL-Command terminates an existing QSO. The QSO number must be specified (U-Command, 1. column). Why this command? It is not made to let the sysop feel like the "big boss", but sometimes it is necessary to kill a QSO.

Example: Station A is connected to station B, and A transmits a longer text to B. After a certain time, the receiver of the text, station B, gets busy, i.e. his TNC sends RNR. When this state is not fixed by B itself, the QSO will last for ever, at least up to the next blackout.

Latest

Display Latest news

Syntax: A <cr>

This command tells the node to show the contents of a text file designated for the latest news items. This news file is set on each node separately so it may contain different information on each node.

After a cold reboot this text is empty.

Sysops may set this text file using the WRITE command.

Links

View or change Links settings

View syntax: L <CR>
Change syntax: L <ch | CALL | -> <CALL> [# | $ | - | @ | > |) | !] <CR>

View links

The LINKS-Command displays the link table set up by the sysop.

Example:

```
=>L <CR>
   DB0KT     0-7    60/68       P1
   DB0AAC    0-15   (---)       P2
   DB0IE     0-1    58          P3
 @ DB0EQ     0-8    (355/399) via DB0IE
   DK7WJ     8-11   44/67       P0
 - DB0ABA                      P4
   DB0BBS    0-15               P5
```

1st column the callsigns of the neighbor nodes are shown. The callsign may be proceeded by an *attribute*.

2nd column shows the SSID ranges of these stations (default: 0-15).

3rd column you read the round trip time to the neighbor in 100 ms -steps. No number here means that the round trip time is not calculated. Three hyphens mean that the link is not available at the moment. Three hyphens within brackets mean that the link is not available but the autorouter is aware of another way to the station. If there is only one number in the column, the link partner does not know about the FlexNet protocol, or the internode QSO could not be established.

When the sysop knows that the neighbor does not know the FlexNet protocol, he may set the attribute "@" to the link. Then only the link is tested, not if the partner knows the protocol. If the round trip time is surrounded by brackets, the link is so bad that it is not made known to the network. If there are two numbers, separated by a diagonal stroke, the neighbor is a FlexNet node. In this case the round trip times of both directions are shown. If these values are within brackets, the autorouter knows a better way to the destination, i.e. the direct link is not used.

4th column shows either the port number of the link to the neighbor (on direct links) or the stations via which the neighbor is reachable. A hyphen behind the port number means that the link is not made known to the network. This may be used for temporary links or software tests for example.

Change links

L <port | CALL | -> <CALL> [# | $ | - | @ | > |) | !] <CR>
L <port> <call> ..... route <call> to <ch>
L <viacall> <call> .. route <call> via <viacall>
L - <call> ..... delete link <call>

The LINK-Command is used to set up interlinks. Two parameters are needed, a 3rd one is optional. Callsigns may be written either as upper- or lowercase.

Parameters:
1st: ... Link Function:
- port: .. set up direct interlink on this port
- call: ... set up interlink via that callsign, i.e. the destination is reachable via a neighbor already specified.
- ..... the minus sign deletes the link entry

2nd ... Here the callsign of the link partner is given. If no SSIDs are specified, 0-15 are assumed. When only the SSID 0 is to be linked, -0 has to be added to the callsign.

3rd: .. options
- **#** ..... link is not shown to the users, thus hidden links, for example for service reasons, are possible.
- **$** ..... link is not checked for availability and not made known to the network.
- **@** ..... no internode communication on this link, but may be used, if the partner is not aware of the FlexNet protocol (i.e. mailboxes)

- ..... partner is not made known to the network. This makes emergency- or test links possible. Internode communication takes place, thus destinations are routed, only the partner stays hidden.

> ..... Subnet-Link. This is used to set up subnets, which will receive all information from the network, but are not made known to the network. The partner callsign and the destinations from it are saved for routing reasons, but not sent to the other network nodes.

) ..... Works like ">", but the link is hidden (">" + "#")

"!" ..... no forwarding of Subnet destinations: Same as ">", but the difference is that the "gateway" node is made known to the network. It is possible to have more than one link to the partner on different ports. The router will always use the best link available. You should remember this if changes are made. The old entry may still be valid under some circumstances. It is also possible to link partners with the same callsign, or a callsign covered by the SSID range of the node. This is interesting for mailboxes, service computers, DX clusters and similar systems. Using this feature, only the node's callsign and SSID is forwarded to the network and not every single SSID of the different computers. This helps keeping the D-list in the network smaller. Note: A maximum of 20 links may be entered. The sysop will get an error message "Can't Link" when attempting to add the 21st link.

Example:

MYCALL DB0AIS 0-10

```
L 1 DB0AIS-8 @ (Mailbox)
L 2 DB0AIS-9 @ (Cluster)
L 3 DB0AIS-10 @ (TCP/IP)
```

Only DB0AIS 0-10 is known to the network. If there is a connect request to DB0AIS-8, it is sent out on port 1 to the BBS. The links are not tested as usual. If the link is not available, the user gets connected to the node itself. Here, the user should get to know what is wrong, perhaps by the C-text. This routing method works on user ports, too. In our example, if DB0AIS would have a user port, the node may be connected as DB0AIS or as DB0AIS-3, and the BBS DB0AIS may be directly connected without digipeaters.

More examples:

```
L 3 DB0KT
```

All frames to DB0KT will be sent on port 3

```
L 1 DB0KT
L 1 DB0FUL
```

On port 1, 2 link partners are reachable, so the setup has both calls on port 1. There is a principle which says that if no SSIDs are specified behind the link callsign, all SSIDs are routed via this port. But when a SSID is specified, only the SSID is routed. Example:

```
L 1 DB0KT
```

All frames route to DB0KT, i.e. also the frames to DB0KT-1, DB0KT-2 are routed to port 1.

```
L 1 DB0KT-7
```

Only the frames to DB0KT-7 are sent to port 1. Other SSIDs are routed by the D-List, when no other links to DB0KT are specified. On FlexNet partners the SSID-Range is automatically adapted. To remove an entry from the link list, a "-" is given instead of the port number as the first parameter. Example: DB0ODW has the links

1: DB0KT 2: DB0EAD 3: DB0IE "L - DB0KT" deletes the routing entry for DB0KT. If there is more than one link to the partner, the command has to be given several times to delete every entry. Always only the first entry is removed from the table. Links to NET/ROM partners should be set up as shown in the appendix.

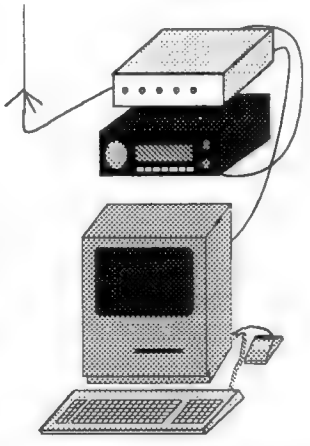
Local

Display the LOCAL text file

Syntax: LO <CR>

The LO-Command shows the text-file LOCAL. This text is appended to the CTEXT for local users, but it can be displayed by the LO command separately. The text may only be entered by the sysop using the WRITE command. After a cold reboot this text is empty.

Continued on next page



Mail

Set or go to the local BBS

Go to syntax: M <CR>
Set syntax: M <call> <CR>

Go To BBS

The MAIL-Command connects you to the nearest BBS as defined by the sysop. This command therefore works like a "Connect" command with predefined destination. The BBS callsign can be shown with "M ?" (notice the space!)

Set local BBS

With this command, a BBS callsign is assigned to the node, which can be reached by the users issuing the "M"-Command. It must be reachable in a single step and known to the autorouter.

Mheard

List stations heard on user ports

Syntax: MH <port> <count> <call>

The Heard list can be displayed. All heard callsigns are inserted into the list. The list contains max. 200 callsigns and is saved to HD on PCs every ten minutes.

Options:

<port> ..... Portnumber 0-15, list only callsigns heard on this port

<count> ... number of callsigns to be listed. Default is 30. <count> must be in the range 16 ... 200.

<call> ..... Look for this callsign. SSID is ignored if not specified. The MHeard-Command by default displays the last 30 direct heard callsigns. Optionally, a port number, a callsign (with or without SSID) or a number (16 ... 200) of entries to be listed, may be given.

Mycall

Set or display the callsign and ssid range of the node

Display syntax: MY <CR>
Set syntax: MY <call> [<ssid1> <ssid2>] <CR>

Display mycall command

The mycall command gives the callsign and the SSID range of the node.

Example:

=> MY <CR>
mycall: DB0ODW, SSIDs: 0-7
=>

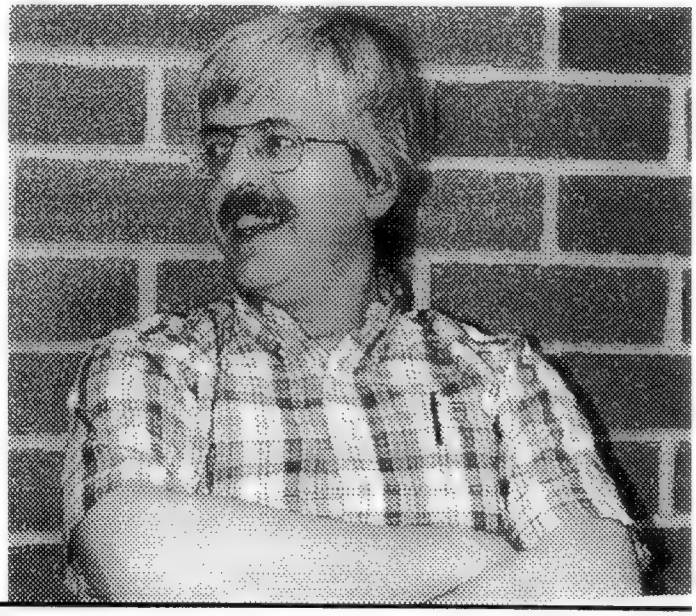
Set mycall command

The MYCALL-Command is used by the sysop to set up the callsign of the node. With the optional SSIDs a range may be defined by which the node can be connected. The SSID range must include the SSIDs of every port, no port SSID must be outside the SSID range defined by MYCALL.

Example:

M DB0ODW 0 7

The node callsign is set to DB0ODW. The node may be connected as DB0ODW-0 to DB0ODW-7. When the MYCALL is changed, this will affect only new QSOs. Existing connections stay valid under the old callsign. The internode communication is re-initialized completely, since the change of the callsign needs to be forwarded to the network immediately.



Dana Jonas, WA2WNI
Dana lives in Valatie, NY with his wife and two kids. Dana has been operating VHF and UHF repeaters since the late '70's. He founded the New York East Packet Radio Club which was one of the forerunners of NEDA. Dana is one of the original 7 founders of NEDA in 1989 and has served as a NEDA officer ever since. Dana is current serving on the Board of Directors of NEDA.

Mode

Change parameters on a port

Syntax: MO <port> <mode> <CR>

This command sets the operating parameters of a specified port. The mode parameters are:

<num> .... baudrate (on internal clock)
"d" ..... full duplex (half duplex is default)
"t" ..... external TX Clock (depends on hardware)
"r" ..... external Rx Clock (depends on hardware)
"z" ..... NRZ mode (depends on hardware, NRZI mode is default)
"c" ..... KISS: CRC mode; HDLC: Soft-DCD (depends on hardware)
"m" ..... DAMA master
"s" ..... synchronize channel with other "s"-channels
"u" ..... user port - sets generic user port options.
"y" ..... auto sysop: Stations which connect on this port without digipeaters in their path are automatically sysops.
"-" ..... deactivate port
"." ..... dummy, if there are no arguments needed on special hardware

The parameters baudrate, "d", "t", "r", "z" and "c" depend on hardware. Check out the hardware or driver documentation.

Examples:

```
MODE 3 19200d      ;port 3 19200 baud full duplex
MODE 3 38400trz    ;port 3 38400 baud ext clock, NRZ
MODE 3 -           ;special case: turn off port 3
```

When a MODE command is entered, all Layer1 modules of all channels get initialized. This is not a big problem, only frames currently being transmitted or received are involved. QSOs are not affected. A Mode-Command may re-initialize "hanging" SCCs. Therefore you should always try a Mode-Command first before a RESET or RESTART since all QSOs get lost in this case. The port number is not relevant, a "MO 11" will do the job.

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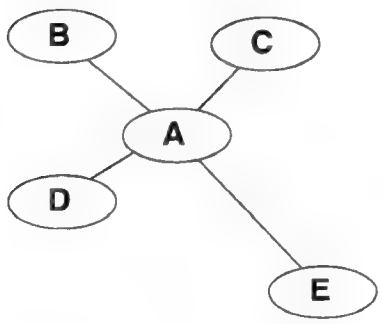


KPC3 KISS with FlexNet

I would like to describe my experience using Flexnet with KISS driver and KPC-3 KISS TNC. True, the Flex documentation recommends only to use the KISS driver on a serial wire link between two PCs. I chose to experiment with a PC-to-PC link, but with two radios in the middle. In other words, a typical point-to-point radio link.

I have a point-to-point link with a nearby node. The channel is half-duplex, it has no users, it is never "busy", and packet collisions are rare. In this type of link, is there any need for dynamic adjustment of parameters?? No. I set the initial Flex-Digi parameters as recommended by NEDA folks for a point-to-point link, and leave them alone. (The station at the other end of the link is a BPQ node.)

The results have been very good. There has been no degradation on the channel, in fact, it has improved. The measured throughput has increased, although I do not know why. Perhaps it is because the Flexnet software performs other improvements, even when limited by the KISS interface. The average improvement in throughput has been about 50-75 percent. On some days, I have seen throughput over 100 percent better than the previous average NetRom performance. At *no time* have I ever seen the throughput *less* than the old configuration. The measurements took place over a period of 2 weeks.

In summary, my results using the KISS driver with Flexnet on a point-to-point radio channel have been better than expectations. I conclude that it may be OK to use Flexnet with KISS TNC, under these conditions. Note: my BPQ neighbor has corroborated these results and is impressed with Flexnet, but he has many Kantronics units, and so he is not eager to make the hardware changes necessary to adopt Flexnet at his end.

—Not sure, may be DG4FDI

Parameters

Set or Display parameter values

Display syntax: P <CR>
Set syntax: P I <value> or
P S <value> <port> or
P T <value> <port>

Display Parameters values

The PARAMETERS command puts out a list of the current parameters and some channel statistics. Additionally, the links as shown with the <L> command are displayed.

Example:

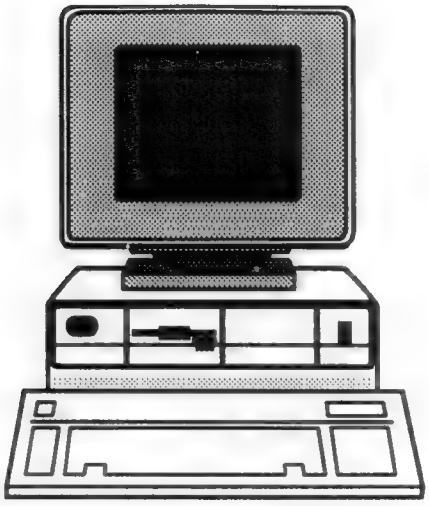
=> P <CR>

po	id	td	qso	usr	tifr	rifr	tkby	rkby	qty	mode	links	ssids	time
1		10	30	1	365	287	50	33	100	9600d*+	DB0KT	0-10	6/6
2		1	36	1	271	908	30	163	99	19200d*+	DB0GV	0-0	4
3		1	1	1	0	0	0	0	100	9600d*+	DB0GV	6-6	10
4		40	3	1	27	3	2	0	82	1200*+	DB0TCP	0-15	580/647
5		1	50	1	835	77	102	55	100	19200dtr*+	DB0SHI	0-15	11/39
6		1	39	1	582	546	78	42	100	38400d*+	DB0GV	10-12	1/1
7		40	4	1	31	3	2	0	70	1200*+	DB0ASF	0-15	229/243
8	7	40	8	8	184	36	34	1	92	1200*+			

The single columns mean:

po: ..... Port number
id: ..... Port SSID, on interlink-only ports ""
td: ..... TxDelay in 10 ms units
qso: ..... number of QSOs on this port, internode QSOs are also counted
usr: ..... number of stations heard on this port (since 3 mins)
tifr: ..... transmitted I-frames within the last 10 mins
rifr: ..... received I-frames within the last 10 mins
tkby: ..... transmitted kilobytes within the last 10 mins
rkby: ..... received kilobytes within the last 10 mins
qty: ..... quality of the channel; this is updated every 10 mins, but not if there was nothing to send.
mode: ..... Baudrate on this port, additionally:
"c" ..... KISS: CRC-Mode, HDLC: Software-DCD (depends on hardware)
"d" ..... full duplex
"t" ..... external TX-Clock
"r" ..... external RX-Clock
"z" ..... NRZ mode
"m" ..... DAMA master
"s" ..... port is synchronized
"u" ..... port is user port
"y" ..... auto sysop
"+" ..... 8 Mhz CPU-Clock (RMNC)
"!" ..... 12 Mhz CPU-Clock (RMNC)
"#" ..... 16 Mhz CPU-Clock (RMNC)
links: ..... see <L>-Command

When counting the I-frames, reiterated frames and frames which got lost due to DISC are not counted. The kilobyte statements are only the contents of the acknowledged I-frames, reiterations are not counted, either. Thus, this is the genuine net data rate.



Set Parameter values

The PARAMETER command is used to set up the TxDelay, SSID and the node time-out of a specified port.

"P I <n>" sets the node time-out to <n> minutes where a range from 60 to 255 is valid. n=0 (recommended) disables the time-out.

"P T <n> <port>" sets the TxDelay of port <port> to <n> in 10ms units.

"P S <n> <port>" sets the SSID of port <port> to <n>. When an already-set SSID has to be deleted, <port> has to be 16. Why do we need SSIDs? They do two jobs: Only on ports which do have a SSID, everyone is allowed to connect. Exclusive interlink ports therefore should not have SSIDs (exception: links to NET/ROM partners, see appendix). The SSID is also needed for routing purposes, if a user who is not in the MHeard-list shall be connected on a specified port. The connect then needs to go via the according SSID, i.e. via <nodecall>-<port-SSID>.

Quit

Disconnect from the current node

Syntax: Q <CR>

Sign off from the current node. This will leave you disconnected, or reconnected back to a previous node.

Reset

Cold boot the node

Syntax: RESET <CR>

This command cold-reboots the node. All QSOs, parameters in the RAM and the text files get lost. This may also reset the parameters. See also RESTART.

Restart

Restart the nodes, leaving parameters alone

Syntax: RESTART <CR>

The RESTART-Command basically does the same as the RESET command. However, parameters and text files remain in memory, so usually you should use this command instead of RESET. You should use both commands only in emergency, since all QSOs and the routing information get lost. This command is also available only on RMNC systems.

Setsearch

Request the list of nodes that a FIND will be performed on

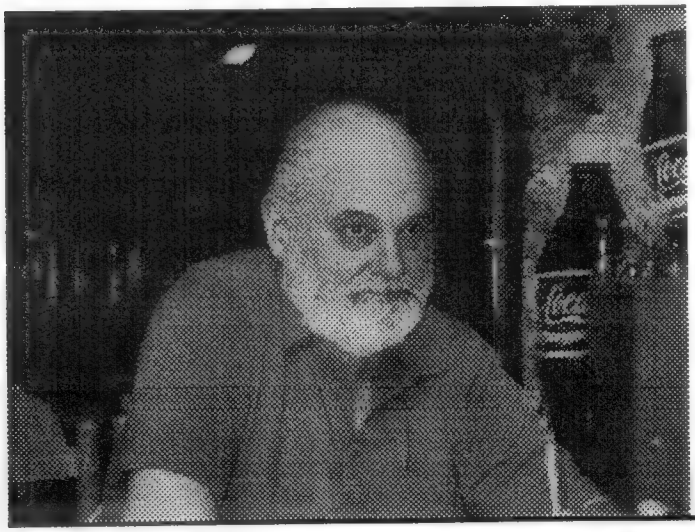
Syntax: S <CR>

The SETSEARCH-Command displays all digipeaters via which the FIND-Command searches for someone.

Example:

```
=>S<CR>
search digis:
DB0ODW
DB0KT via DB0ODW
DB0AAI via DB0ODW
DB0DA via DB0ODW
DB0IE via DB0ODW
=>
```

The frame generated by the FIND-Command would be sent via DB0ODW, DB0KT, DB0DA,



Ray Feely - K1CSB
Ray is a member of NEDA's board of directors. He's from western Massachusetts and has been part of the crew on the MTM and CHESTR nodes.

Sysop

Request Sysop access for remote user

Syntax: SY <CR>

The SYSOP-Command is used to do the sysop authorization. When a remote request is sent to the node from the sysop to enter the sysop mode, the node answers with a random number. This number has to be answered by the sysop with the exact combination. The algorithm used is easy enough to do the calculations without a calculator, therefore security is limited. Perhaps the algorithm will be changed in future. How does it work?

Example:

```
=>SY<CR>
<- sysop command 12345>
```

The reply included a 5 digit number which is the seed for your calculation to compute the reply. In order to respond, and log in as sysop you need to know the seed and the sysop code. Assumed that the sysop code programmed in the node is 54321 and the number the node sent as the seed is 12345 (as above.) Now the calculation:

* multiply the coinciding random & sysop numbers

1 2 3 4 5 <- random number

5 4 3 2 1 <- sysop secret number

1*5=5; 2*4=8; 3*3=9; 4*2=8; 5*1=5

* Now sum up the products: 5+8+9+8+5=35 Ready. 35 is the number the node expects to receive. Now you are sysop (provided, your calculation was OK). To make it more difficult for spies, you may send the SY-Command more than once. The calculation has to be right only once. If the other answers are wrong, it is more difficult for a spy to catch the secret code. After successful login as sysop no message is returned. You may now try out whether it went all right by a harmless command like TIMEOUT. If you are logged in as sysop, the node timeout is not valid for you anymore, i.e. you may stay connected to the node as long as you wish. The sysop authorization is removed by disconnect, reconnect (link reset) or a Connect-Command. It is possible that more sysops are logged in at the same time.

Continued on next page

Talk

Send text to another user

Syntax: T <call> [<text>] <CR>

With this command you can talk to other users connected to the node. There are two modes: T callsign this puts you in a one on one converse with the station. /q exits the conversation. T callsign text This sends a single line of text to the station.

User

Show current node users

Syntax: U [n] <CR>

The USERS-command displays all users which have a QSO with or via the node. Additional information is provided: Example:

```
=> U <CR>
   1:  S5      P0   :  DB0ODW>DG3FBL
   6:  S7 U1   P0   :  DB0ODW>DK7WJ
  35:  S5      P0   :  DL1AA>DB0GV v DB0ODW DB0KT
2014:  S5      P8   :  DB0GV>DL1AA v DB0KT DB0ODW
```

The columns are:

- QSO number. The node uses this number for internal management of the QSL.
- QSO state. This number shows the state of the QSO. See Layer 2 States.
- Unacknowledged Frames. (if any)
- Port
- Callsign and path - The QSOs with the node are shown first, then the ones which run via the node.

Additional parameters may be used during the USER command. If you use the "i" parameter, only QSOs with the node are shown (i.e. users sitting at the node who are available for TALKing to). If you enter a port number, you get all QSOs via that port. Using "U *" you get additional information about the QSOs. The parameters may be combined. For example, "U * 4" shows all QSOs on port 4 with detailed information.

Example: => U * <CR>

```
   1:  S5      F100 M3  P0 : DB0ODW > DG3FBL
   6:  S7 U1   F87  M7  P0 : DB0ODW > DK7WJ
  35:  S5  !   F50  M4  P0 : DL1AA > DB0GV v DB0ODW DB0KT
2014:  S5  !   F66  M7  P8 : DB0GV > DL1AA v DB0KT DB0ODW
```

In this detailed user list the actual FRACK time "Fxxx" and MAXFRAME "Mx" are shown for each QSO. On DAMA masters the DAMA priority is shown instead of FRACK. A "!" in front of the F-value says that the QSO is using header-compression.

Write

Set the contents of text files

Syntax: WRITE <A|B|C|H|I|L|S> <CR>

The WRITE command is used to set the contents of several news/information files for the user. It is also used to set a couple of special purpose configuration files (Beacon and Setsearch). By using the WRITE-Command, the texts for L(A)test news, (B)eacon, (C)-Text, (H)elp, (I)nfo, (LO)cal and (S)etsearch may be entered. All texts except (B)eacon and (S)etsearch may have any desired format. The C-text is sent after the standard system prompt at the beginning of a connect. Standard prompt is "xxxx/FlexNet Vx.x". The C-Text is shown after this.

We recommend the following usage of the texts:

LATEST NEWS: recent information about the node and things every user should know

INFO: general information about the FlexNet node. QTH, hardware, antennas, use of IO-ports etc. You should not forget to mention the user frequencies. I suggest the first line be the 6 character grid square of the node. The 2nd line should be the City, State/Province, Country. Following lines should contain no more than a couple of hundred characters about the node, club, user frequencies/ports etc..

LOCAL: this text is appended to the C-Text, when the user comes direct, i.e. without digipeaters in the path. This is the right place for information about the channel access method and other information which is only interesting for local users.

HELP: A short users guide to the system with the most important commands.

The end of the text is marked by either /EX or Ctrl-Z. The text is saved up to the last line before the /EX. Since many PR-stations use "split screen" programs, it is recommended to begin every text except the C-Text with a single <CR>. This looks much better. The Beacon-file has a special format. You may set up any beacon on any port. The file format is as follows: # <t> <p> <tocall> [via [via ...]] :Beacon text..#

<#> ..... delimits the different beacon information
<t> ..... time between two beacon transmissions, in minutes. (1..255 minutes)
<p> ..... port number where the beacon is to be sent
<tocall> ... Destination call of the beacon, for example "BEACON", "RMNC", "FLXNET", "TEST" or similar, there may be up to 8 digipeaters specified, via which the beacon will be sent.

Example:

```
10 0 RMNC:Digi Odenwald * JN49IQ * Krehberg/Odw. *#
30 1 RMNC DB0KT DB0ODW:DB0KT QRV#
5  0
```

FLXNET:Testbeacon DB0ODW

Our example consists of 3 beacons, each delimited by a "#"

(beacon1...#beacon2...#beacon3...)

Between the single statements there may be <CR>s to improve readability. It is not important whether the callsigns are upper- or lowercase. Source callsign of the beacon is always the mycall of the node. When no beacon-text has been entered since the last cold-reboot, the default-beacon is sent every 3 minutes:

#3 0 FLXNET:RMNC/FlexNet V3.3d

ll beacons are sent as UI (Unproto-Information) with the command bit set. The SETSEARCH-file has a special format, too. There may be as many search paths as you like. The limit is dependent upon the available memory. The number of the digipeaters is limited to 7. The format is:

<call1>
<call1> [<call2> [<call 3> [<call 4> [<call 5>]]]]

The SETSEARCH-file contains all paths via which the FIND-Command sends its UI-Frames. The first callsign in the line is the digipeater which shall send the UI to the user, the following digipeaters specify the path to the destination digi. These paths should always be identical to the path a user will use. This means, digipeaters on the route to the destination should be left out, the autorouter will know the way.

Example:

DB0ODW DB0DA via DB0ODW
DB0KT via DB0ODW DB0AAI via DB0ODW

The first line says that the UI-frame is sent via the local user port. Second line demonstrates how a path to DB0DA is set up. DB0DA is reachable from DB0ODW via autorouter.

Written: Gunter Jost DK7WJ
Translated: Mario Lorenz DG0JAB
Edited: Tadd Torborg KA2DEW

Tech Committee Minutes from page 3

- Connect syntax is:
  C {Usercallsign} V {1stDigiCallsign}
  C {Usercallsign} V {1stDigiCallsign} {LastDigiCallsign}

Samples shown of Connect Texts which show callsigns to local nodes. Initially the users were very confused as mnemonics do not work on FlexNet. All connects are to CALLSIGN via DIGI Via DIGI.

The <D> Callsign inquiry will result in a report back that shows ALL the steps to a destination. Calls in lower case are non FlexNet.

A 386dx-33 CPU is currently running 9 RS232 ports very nicely...

Links statement can only take a max of 20 statements. The neighbors are put in and the software then figures out the timing and reports it in the table. The "@" character at the end of a link list shows a non-FlexNet port.

Samples were shown of various commands into a Flexnet site.

In the NYC-Metro area, tests were done that showed that IP could run through FlexNet. A 2nd computer was put at the 1st site to handle the router. This worked fine, but IP was found to disconnect when it had to work through more than 1 site.

Latest tests show that JNOS works through FlexNet. There is also a set of modules that will load up a PC under windows with a virtual network card defined in software. This allows existing IP apps to run under FlexNet. (See latest NEDA Report - Jan '99)

break for lunch....

Bob (BJG) continued after a very nice buffet luncheon....

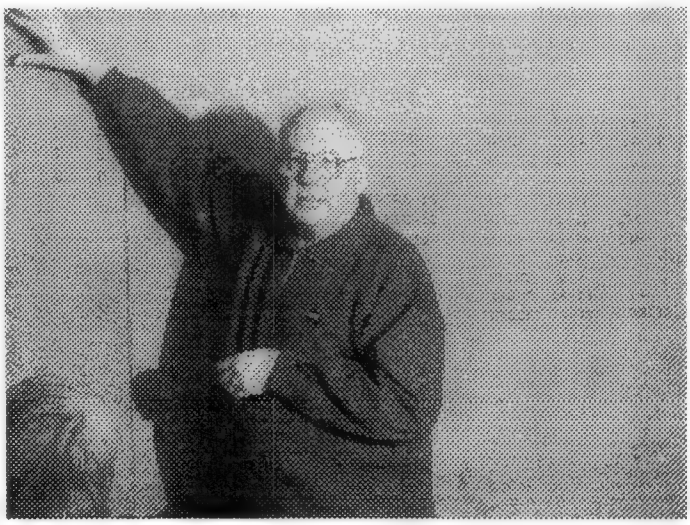
Some discussion of BBS' and bulletin forwarding. Large sections of the country no longer have packet connectivity as services have disappeared. W0RLI for example is no longer running a BBS.

There are some new HF forwarding stations passing traffic.

mtg closed at 12:35pm

—NEDA

Bob Anderson, K2BJG
gave us a lecture on FlexNet



Aquiring RMNC Hardware

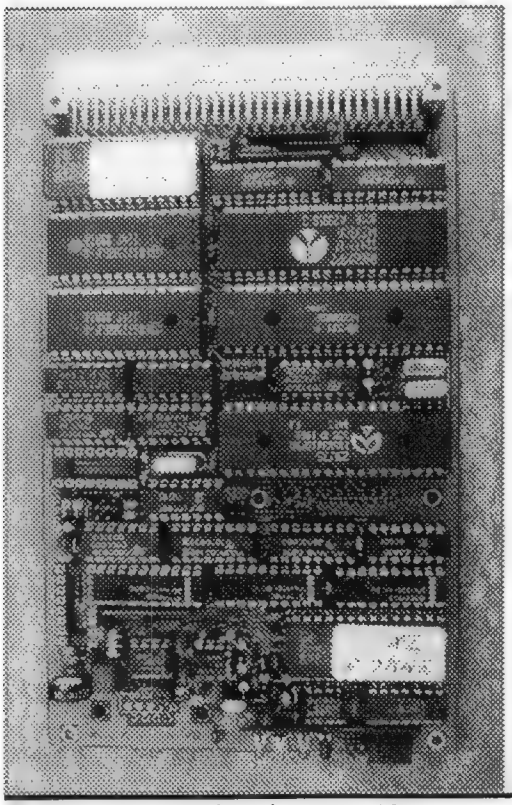
I have a catalog for the RMNC stuff which lists the prices. The name of the company is Landolt Computer, Robert-Bosch-Strasse 14, D63477 Maintal, Germany. Fax number is 011 49 6181 431043. (No sense giving the phone number, they read but do not speak English...)

Their literature, which includes a copy of Horzepa's column from QST (not dated though) regarding FlexNet, also includes the following:

To construct an RMNC/FlexNet node you need:

1 Reset card
1 Solo Master (Not absolutely required, but recommended.)
1 Bus card (passive backplane), 10 or 16 position
1 Channel card with modem for EACH user port or link.
1 Channel card with KISS (RS-232) interface for the local terminal (or BBS or DXCluster).
1 Bus monitor (Not absolutely required)
1 RAM socket with buffer battery (holds INFO texts in RAM-Not absolutely required)
1 5 volt power supply
1 FlexNet software from DK7WJ

RMNC3 (current version) and RMNC2 cards may be mixed. Cards with 4, 8, 12 and 16 MHz CPU clocks may be mixed.



This is a populated RMNC channel card.

All prices are in German Marks (July 1996 listing). On August 10th, 1998 the exchange rate was about 56% so a 8MHz RMNC card kit is 185 Marks or $103.60.

RMNC3 Channel Card bare PC Board ..... 49.
RMNC3 Channel Card kit - 4 MHz ..... 165.
Ditto, 8 MHz ..... 185.
Ditto, 12 MHz ..... 211.

Assembled Channel Cards

Speed	1k2 Modem	G3RUH Modem	RS-232 modem
8 MHz	330.	425.	269.
12 MHz	356.	450.	295.

For RMNC3 Cards:
G3RUH Modem kit: 140
TCM3105 modem kit: ..... 70. *
Solomaster kit, 8 MHz ..... 139.
Ditto, 12 MHz ..... 149.
Solomaster assembled, 8 MHz ..... 189.
Ditto, 12 MHz ..... 199.

Bus Monitor:
Bare Board ..... 30.
Kit ..... 70.
Ass'd ..... 120.

Reset Card:
Bare Board ..... 30.
Kit ..... 70.
Ass'd ..... 120.

Passive backplane Boards:
10-position ..... 45.
16 position ..... 69.
16 position, assembled ..... 149.

The RMNC2 hardware is also still available, but this is not a good way to save money - compare it to buying a TNC1 for a network.

* The 3105 modem kit is grossly overpriced (IMHO).

==========

I am confident that for quantity orders, we can get a discount. Also, we can probably get an even bigger discount if we ask some friends in Germany to intercede on our behalf.

--Don, N2IRZ

RMNC3 - One for All

FlexNet Hardware

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Translated by:
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A. Preface by editor
This document is included with the RMNC kit (see facing page.) The kit's document is in German.

1. Introduction

The original RMNC (Rhein-Main Network Controller) card was developed by the Frankfurt Packet Radio Group in 1985, and redesigned as the RMNC2 card in 1988. In 1990 the author finished the first FlexNet implementation for this card. It was intended that this version remain fully compatible with FlexNet version 1; that is, without requiring any hardware modifications. With the subsequent FlexNet versions it became clear that a change would be necessary. With the development of FlexNet version 3.2 we need four (with KISS-mode, five) soldered jumper wires. To implement greater than eight slave cards, we need yet another patch.

The Bus interconnecting the cards was already a topic of discussion. Many users were experiencing problems with only six cards, and at other sites fifteen cards were functioning without problems. It was known that with only five cards the 6522 was already operating outside of its published specifications, even though many components offered better performance than specified.

There were also great problems with the SCC clock, requiring it to be regenerated on each channel card.

There were also anachronisms in the modem section, as it wasn't capable of full-duplex operation without a patch, and the transmit audio (TXA) remained on even during receive, leading to other problems.

This was getting on the nerves of the sysops. The cards weren't working well, and the weaknesses were affecting the reliability of the network nodes, which has elementary implications for our network. Already at this early point we saw many reasons for further development of the RMNC card.

2. Overview and design parameters

After compiling the ideas, the list of requirements was quite extensive. By running the development work on Version 3.2 in parallel, the necessary software changes could be realized directly.

The card should naturally not cost much more than the predecessor. Many sites needed to be updated, and the denser circuit card has its price. All in all, the increased costs were reasonable, especially since the FSK modem was on-board, eliminating the need for a costly daughterboard.

2.1 Buffered Bus

In the 74AC logic family there are ICs which offer very high driver capabilities combined with CMOS input impedances. Thus, the Bus was fully buffered with AC family components, ending that issue.

2.2 Higher card addresses

Previously, for card addresses higher than 8 it was necessary to put a patch into the EPROM. That made the node more difficult to maintain and complicated the EPROM burning process. With a simple 4-bit DIP switch all 15 card addresses can be set directly. Anyone not trusting DIP switches, like the author, can always install soldered jumpers.

2.3 FSK Modem

The FSK technology introduced by G3RUH [1] has become the de-facto standard for links and some user ports. So, we had to find some space on the card for an FSK modem. We took the basic form of the DF9IC version [2] and redesigned it, as the original required too much real estate. Through an energetic redesign, especially by eliminating the need for SCC clock regeneration, enough space was saved to include the modem. As a further advancement, the baud rate of the FSK modem can now be changed in software, based upon the SCC clock.

The filter used in the modem was newly developed in cooperation with DF9IC, using a switched-capacitor filter from MAXIM [3]. With this IC, the filter characteristics can be automatically adjusted for a wide range of data rates. Special values for precise after-filtering were used to reduce the effects of the switched-capacitor on the transmitted spectrum. The DCD switching was also newly developed. The previously used analog comparator gave way to a counter chain, so that the speed automatically adjusts to fit the clock rate.

Continued on page 20

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2.4 AFSK modem

In order to accommodate the existing AFSK users, a little space was devoted to the well-known TCM3105 modem. Of course, the transmit audio must be silenced when in receive mode.

2.5 Echo-duplex control

User ports operate ideally with echo-duplex. For the generation of the DCD-controlled echo or flag signals, previously an additional external switch was required. Through the use of the FSK modem GAL (Gate Array Logic) chips, this control could be integrated with no additional circuitry. The echo switching is used for both modems, and the echo is enabled or disabled through software.

2.6 KISS level converter

After discovering that the circuit board was not yet full, a MAX-232 chip was installed to realize an RS-232 interface. This operates directly in KISS mode.

2.7 Clock generation

The SCC clock is generated locally on each card. Thus, the problems with carrying the clock signals on the Bus disappear, and one can increase the clock speed if a faster SCC chip is installed. The generation of faster and more varied clock signals also makes internal RX clocks possible. The software recognizes the clock frequency automatically (see Table 1). The suggested value is 7.37 MHz, with which "odd" data rates (1800, 3600, 7200, 14400, 28800, etc.) are also possible.

2.8 Mechanical

We were careful to ensure that the mounting of front plates with commonly available 19" rack-mount materials was possible. The 9-pole sub-D connector, for connecting the transceiver or computer is directly connectable by using the 90 degree mounting version. The trimmers for adjusting the transmit audio drive level, as well as the important jumpers, are all located in the front of the card, where they are easily accessible.

2.9 Indicators

Also at the front edge are the LEDs to indicate PTT (CTS) and DCD. Since the SCC had a number of unused universal outputs, two additional LEDs were installed. RMNC/FlexNet 3.2 uses these two LEDs to show STA and CON, as per the TAPR TNC2 standard, providing a useful overview of channel activity.

2.10 Software

One reason for the long 'growing time' of FlexNet 3.2 was that the required changes had to be introduced for the new card at the same time. Naturally, we had to ensure that the software would run well on the old cards as well. Important points to consider in this regard are in the READ.ME file as well as in the documentation. It must be noted that the new cards are NOT able to run with old software, including version 3.1a. The routines for control of the bus drivers are missing. In an emergency, the bus drivers can be installed with jumper wires, when the installation of an old version of FlexNet is unavoidable. Clock crystal Q2 absolutely must be in this case 4.9152 MHz. The internal FSK modem cannot be used with older versions of software, because the required clock is supplied on the wrong SCC pin.

3. Circuit Description

In the following circuit description it is assumed that the basic function of the previous RMNC2 card and the DF9IC/G3RUH-type FSK modems is understood. The description can thus be kept shorter.

3.1 Processor section

In the processor section of the card there was little extra room, in that the card had to remain compatible with the RMNC2.

Bus Buffering

The bus buffering is realized with IC11 and IC12. The controlling IC2 doesn't have a sufficient number of output pins, requiring hardware and software tricks to implement all the desired functions. Also possible was the 4th bit for the card address, as well as a jumper for switching the operation type. The address bus is terminated with RN1. When 16 cards are installed on a backplane, it results in a total resistance of 625 ohms, which means a driver current of 8 mA. To avoid overdriving the bus, which can lead to RFI, the data and address busses are driven through 22 Ohm resistors. This bus control is compatible with RMNC2 cards, in that the drivers can deliver more current, and the inputs require less current. The noise resistance is considerably better, as the 74AC logic used has a decision level of 2.5 volts.

Table 1: Possible data rates in relation to Q2

	Baud rate														
Q2 (MHz)	300	1200	1800	2400	3600	4800	7200	9600	14k4	19k2	28k8	38k4	57k6	76k8	115k
4.9152	X	X		X		X		X		X		X		1)	
7.3728	X	X	X	X	X	X	X	X	X	X	X	X	X	1)	1)
9.8304	X	X		X		X		X		X		X		X	
14.7456	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

X = Available 1) Only in KISS mode

SCC Control

Here a hardware reset is used. This prevents the SCC from transmitting continuously in the case of a faulty EPROM, a situation that can occur occasionally. Because of this countermeasure, the PTT alarm can be removed. In extreme cases a hardware reset of the entire system is performed via the watchdog on the Reset card.

The SCC clock (PCLK) is delivered from a local oscillator through IC9F. In this way, even new, previously unavailable clock rates can be selected. Table 1 shows the possible data rates in terms of the crystal frequency. In most cases, one should choose 7.37 MHz, which covers most of the rates needed. Note that the SCC type must above all be of a faster type than previously used. Table 2 shows the necessary speed in terms of CPU and SCC clock rates.

Table 2: Minimum SCC speed in relation to Q1 and Q2

	Q1 (MHz)			
Q2 (MHz)	4	8	12	16
4.9152	6	10	16	20
7.3728	8	10	16	20
9.8304	10	10	16	20
14.7456	16	16	16	20

The software (as of version 3.2) automatically recognizes the selected clock frequency, therefore only the recommended crystal frequencies should be used. Values in between will not be recognized. This is equally true for Q1 and Q2.

Modem Interface

The previous connector has been deleted. Instead, a DF9IC-type header is provided as ST2, which has in the meantime also gained popularity in other systems. You no longer need to cut PC Board traces, as all of the signals required for the internal modems are available from jumpers or pads off the ICs.

Slave Download

It is planned in the next software version (not yet with 3.2) that the Slaves will be loaded from the Master, so that updates can be accomplished by changing only the Master EPROM. This will please our Beta testers, who will not have to replace their EPROM sockets so frequently. In this case, the Master would require a 27C512. Switching between EPROM types is done with the jumper pair JP2a and JP2b. With Slaves, and with the present master software (using a 27C256) JP2b must be closed.

3.2 FSK Modem

The on-board FSK modem is G3RUH compatible. This plan builds upon the work of DF9IC. Through the integration on the channel card much is simplified and with this the functionality can be increased considerably with little penalty in parts count.

Clock distribution/CPU interface

The modem clock is continuously delivered by the SCC. By installing new crystals you can get a 32x clock for all standard data rates. The clock rate can also be changed in software at any time. Possible clock rates are listed in Table 1.

The channel card must be programmed for external TX clock and NRZI. In this operational mode the SCC is, in version 3.2, programmed to expect a transmit clock on Pin RTxCA (!!) and it delivers a 32x clock on Pin TRxCA. This clock is sent to the RX clock recovery IC18 and the divider IC17A. This last IC delivers a doubled clock for the transmit side. It runs through IC21, where it is doubled for echo duplex mode, but it can be switched with a clock signal synchronized with the received signal. The entire transmit side is supplied only from this clock, designated in the schematic as Tf2.

Transmit side

In IC13 the generated clock is divided by 2. IC13 also has the multiplexer for the echo-duplex switch-over. Data echo and flag transmission can be selected with Jumper 4. The scrambler (IC13 and IC14) as well as the signal generation via IC15 and IC16 have the same function as the DF9IC modem. If the transmit side is inactive (CTS = 1 = true) only the lower half of the EPROM is addressed. Thus a 27C256 must be used, as the upper half contains the only the values for the "resting" condition of the output signal.

The transmit filter is realized with a MAX295 switched-capacitor filter. This 8-pole Butterworth low-pass filter has a knee frequency of 1/50th the supplied clock rate. If it is supplied with the 32x clock, we get a knee frequency of 0.64 times the data rate, adjusting to this value automatically. Following this is a standard 3-pole low pass filter with a constant frequency. This filters the clock frequency and must be adjusted for the desired clock range, in order to ensure a clean signal. The greatest possible variation is 8-to-1, and the capacitors C31, C33 and C34 must unfortunately also be adjusted to the desired clock range. The values in the schematic and parts list are calculated for a range of 4800 to 38400 baud.

IC28b buffers the transmit signal, and the deviation is adjusted with TR2.

Receiver

A variable filter is also found in the receiver, here a MAX296 with Bessel characteristics. Since in the receive circuit only the signals near and above the IF must be filtered out, the predetermined low pass filter can be used for all possible data rates equally.

Continued on page 22

One For All, from page 21

With the help of a 32 stage DPLL, IC18 regenerates the receive clock. DCD switching is realized with an 8 stage counter (IC19, IC20), which counts upwards or downwards according to the condition of the raw DCD signal delivered from IC18, and is clamped at the end-points. The evaluation of the counter state under the consideration of a hysteresis is performed in IC21. The time constant for activation of DCD is scaled according to clock rate, with a value at 9600 baud of about 5 mSec.

The DCD stop-switching is newly developed. This function, controlled by IC17A, replaces the raw DCD signal from IC18 if 15 ones in a row appear in the received data stream. It is extremely unlikely that such a signal would appear in a scrambled signal, and this means that an inadvertent replacement of the DCD signal by itself will not occur.

IC21 also handles the necessary binding of DCD and RTS to CTS in echo-duplex mode. CTS serves as a control for PTT. Jumper JP3 activates the echo switching, while the CPU can switch the echo off via DTR.

The eye diagram can be measured at TP1 (behind the RX filter). Suitable oscilloscope triggering is taken from the TX clock at TP2.

Component usage with AFSK Echo-duplex

With AFSK echo-duplex (for example for user ports) some parts of the FSK modem are used. Unused are only the scrambler (IC14 and IC22) as well as the TX signal generator (IC15 and IC16) and naturally the FSK analog components (IC26, IC27 and IC28). Pull-up resistors for the then open GAL inputs are available at RN7. The transmit data is taken from IC13, and also with AFSK you can switch between data- and flag-echo with JP4. The AFSK receive signal is taken from IC18, and the multiplexer is integrated. The DCD switching required for 1200 baud to recognize a valid data signal is, at about 30 mSec, somewhat longer than with e.g. an XR2211, but thus cannot be opened by tones or similar signals. The receiver can and should be operated with open squelch.

3.3 AFSK Modem

The AFSK modem offers something special. The transmit signal is switched off with IC24D during receive. Be advised that IC24, shown in the AFSK plan, must be populated onto the board, as the PTT is controlled here.

The AFSK modem operates with the internal DCD of the TCM 3105 which, as we know, also reacts to noise. When this becomes a problem, you can either populate the echo variant with deactivated echo (then the digital DCD operates, and JP9 – JP13 remain open, this means however additional cost and current consumption) or an external XR2211 squelch must be pre-switched.

A number of jumpers (JP9 – JP13) must be closed when the modem is operating without echo-addition. These should remain open when the above described echo-duplex variant is in use.

3.4 KISS Interface

Here a MAX232 is used. [*Translator's note: the MAX202 is a better, pin-compatible choice*]. Research has shown that capacitors of 100 nF (0.1 uF) are sufficient, which saves some PC Board real estate [*Translator's note: The MAX202 specifies these smaller caps*]. the D-Sub connector for RS-232 is not completely connected; however TXD and RXD are on the "IBM-norm" pins. Pin 5 must be connected to ground, and if trimmer TR1 is inserted, it must be turned to the left end-stop. Otherwise, you have to install a wire bridge from TR1 Pin 2 to Pin 1, to create the ground connection.

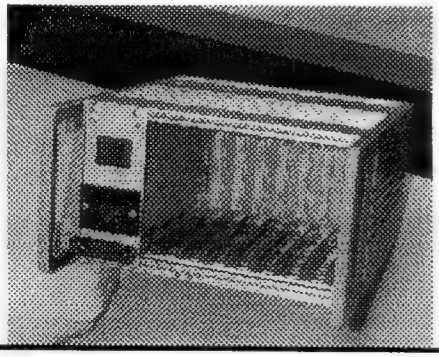
4. Construction Notes

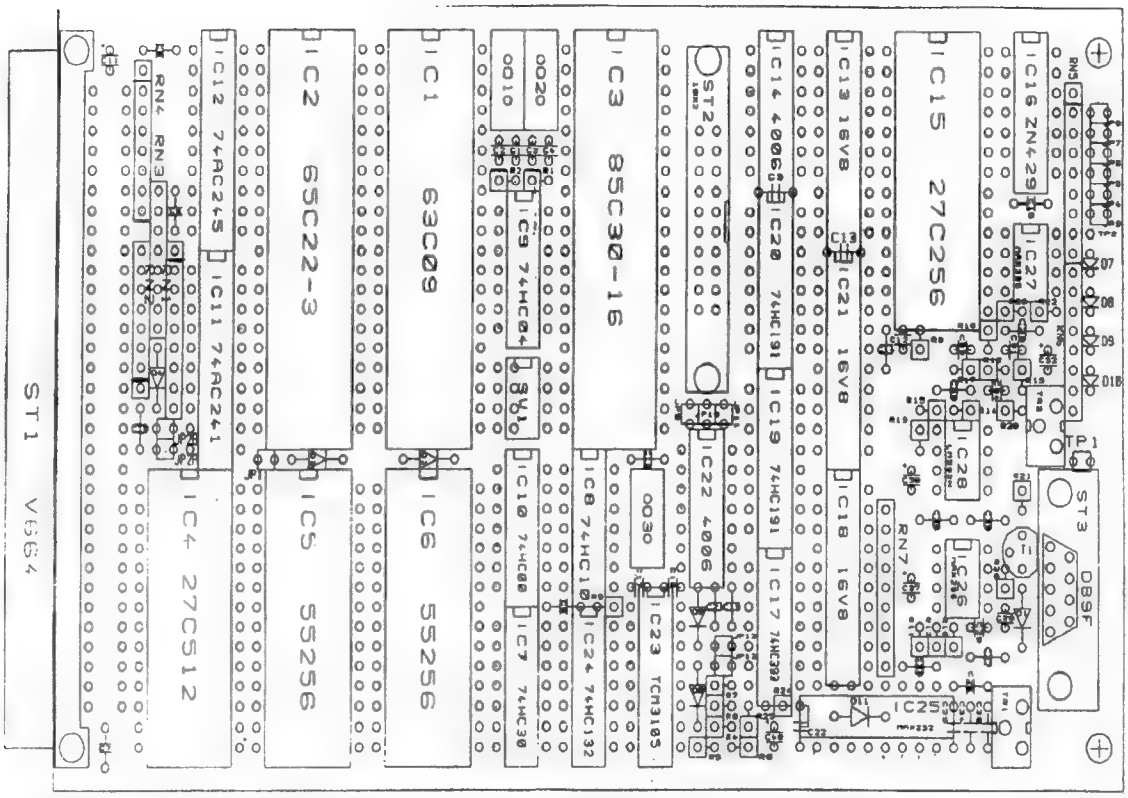
According the which modem type is installed, and whether the board is Master or Slave, the PC Board is only partially populated. It is generally valid that all components, except for the ICs, can remain inserted when some other variant of card is to be made. This simplifies a later reconfiguration. The unneeded ICs must in any case be removed.

Illustration 5 shows the component placement, and diagrams for partial placements are available from the author upon request. A foil layout of the PC Boards was not included, because this is a tightly populated, double-sided board with plated-though holes, which would be nearly impossible to make at home. The PC Board has over 1000 holes, of this about 100 vias.

The component list is divided into multiple parts. Table 3 lists the components that must be selected in accordance with the CPU clock frequency. The basic components that must always be populated are in Table 4, for Slaves or Full master with SCC the components from Table 5 are added, and components for the internal modems (FSK or AFSK) are in Table 6. The components from Table 7 (FSK), Table 8 (AFSK) and Table 9 (RS232/KISS) are added according to the modem type desired.

Continued on page 24





RMNC3 parts layout diagram

Table 4: Basic component population

Component No.	Component Type
IC1	HD63B09 (See Table 3)
IC2	65SC22-2 (See Table 3)
IC4	27C512
IC5, IC6	55256
IC7	74HC30
IC8	74HC10
IC9	74HC04
IC10	74HC00
IC11	74AC241
IC12	74AC245
D2, D3, D4	BAT48
Q1	4/8/12/16 MHz(tbl1&2)
C1, C2	22 pF
C6 – C10, C16	0.1 uF
C11	22 uF
R1	4.7 k
R2	2.2 M
RN1	9x1 – 10 k
RN2, RN3, RN4	8x2 – 22
ST1	VG64 A/C
JP1, JP2a, JP2b	1x2

Table 6: Additional components for Internal modem (FSK or AFSK)

Component No.	Component Type
IC24	74HC132
T1	BS170
D1	ZPD18
D7	LED Red (3mm, 2 mA)
D8, D10	LED Green (3mm, 2 mA)
D9	LED Yellow (3mm, 2 mA)
D11	1N4148
R9	47 K
R24, R26	10 K
R25	1.5 M
RN6	8x2 – 1.5K (or 4 single 1.5Ks)
C40	22 uF
ST3	DE9f - 90°

Table 7: FSK Modem

Component No.	Component Type
IC13	16V8, RMNCT1.1
IC14, IC22	4006
IC15	27C256
IC16	ZN429
IC17	74HC393
IC18	16V8 RMNCC1.1
IC19, IC20	74HC191
IC21	16V8 RMNCR1.1
IC26	MAX296
IC27	MAX295
IC28	LM392N
C12, C31	47 pF
C5, C13 – C16,	0.1 uF
C35, C36, C38,	0.1 uF
C39	0.1 uF
C27	0.47 uF
C28	68 pF
C29	15 pF
C33	0.47 nF
C34	0.56 nF
C30, C32, C37	22 uF
R3, R19, R23	10 k
R10, R11, R12, R13	47 k
R14	4.7 k
R15	1 M
R16	12 k
R17	33 k
R18	22 k
R20	18 k
R21	100
R22	15 k
RN5, RN7	9x1 – 10 k
TR2	50 k upright
TP1, JP3	1x2
JP4 – JP8, TP2	1x1

Table 9: RS-232 / KISS Interface

Component No.	Component Type
IC25	MAX232 or MAX202
C20, C23 - C26	0.1 uF

Table 8 : AFSK Modem

Component No.	Component Type
IC23	TCM3105
D5, D6	1N4148
Q3	4.43 MHz
C17, C18	56 pF
C19, C21, C22	0.1 uF
R5, R7	10 k
R8	4.7 k
R4	47 k
R6	12 k
TR1	1 k upright
JP9 – JP13	1x2

Table 5: Additional components for Full Master or Slave

Component No.	Component Type
IC3	85C30-10 (See Table 2)
Q2	7.37 MHz (See Tables 1 & 2)
C3, C4	22 pF
SW1	DIP-4 sw (Not needed for Master)
ST2	10x2 (Not needed w/internal modem

RMNC3 from page 22

Jumper settings are listed in Table 10.

In every case the placement of components must be verified against the schematic.

Modem Connector (DF9IC-type)

As a connector you can, if desired, also use an upright connector with locks. The upright version brings above all a greatly increased component height, but by using a 90° connector you lose the ability to retrofit an external FSK modem. The fastening holes are laid out for the upright type. Think about the bridge at TR1 when using the KISS modem (see 3.4)!

5. Conclusion

It is hoped that the many variants of component population are not confusing. The goal was to create a PC Board that covers the greatest number of variants, and uses a minimum number of jumpers to accomplish this. It is helpful to become familiar with all of the variants by studying the schematic. The card certainly makes the construction of a new network node, or the expansion of an existing one, much easier. The variable population makes it also possible to keep a completely populated board handy for emergency replacement, as it can be quickly converted to any variant. This was with the previous wire-jumper solution difficult or impossible.

Special thanks to Henning Rech, DF9IC, for the brainstorming for the modem concept, as well as the assistance with the filter design. Thanks also to the Sysops, who gave their ideas during many meetings, greatly influencing the board's final design. Certainly, not every wish was fulfilled, but many details were because of these meetings nonetheless implemented.

As the next hardware development goal, a 16-bit master is in the plan, which together with the RMNC3 channel cards will equip our network for the forseeable future for all requirements.

Table 10: Jumper Settings

Jumper No.	Settings
JP1	Slave: Activate KISS Mode
JP2a	
JP2b	Code EPROM (IC4) 27512
Code EPROM (IC4) 27256 or 27128	
JP3	Activate Echo-duplex
JP4	Echo data (especially flags)
JP5-8	FSK TX pre-distortion selections
JP9-13	AFSK Modem without echo-switching

6. References

1. Miller, J., G3RUH: 9600 baud packet radio modem design. Proceedings of the 7th ARRL Computer Networking Conference.

1. Rech, W. H. , DF9IC: Modernes FSK-Modem – kompatibel zum Standard nach G3RUH, ADACOM Magazin 2/1991, pp13-31 [Modern FSK Modem, compatible with the G3RUH standard; in German]

3. MAXIM data sheet: Switched Capacitor Filter MAX29x.

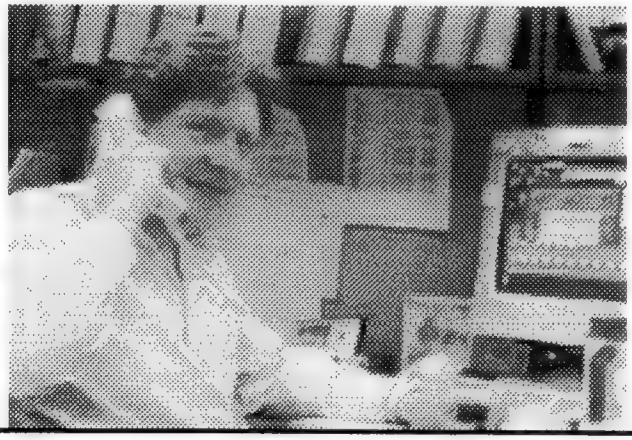
—Gunter Jost, DK7WJ

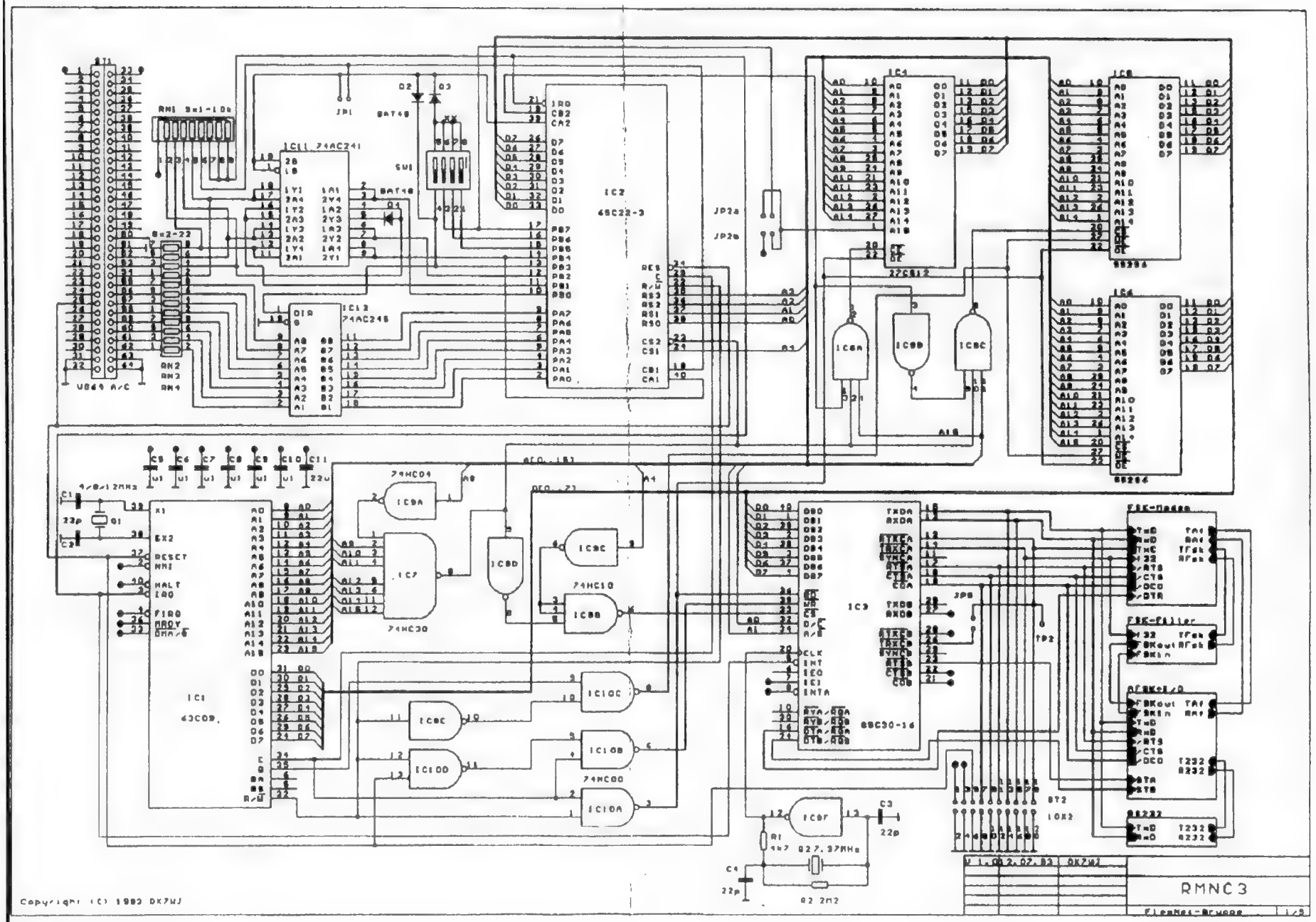
Table 3: CPU and VIA types (IC1/IC2) in relation to Q1

	Q1 (MHz)			
	4	8	12	16
CPU (IC1)				
NMOS	MC6809	MC68B09	. . .	. . .
CMOS	HD6309	HD63B09	HD63C09	HD63C09 selected
VIA (IC2)				
NMOS	6522	. . .	. . .	. . .
CMOS	65C22P	65C22P-2	65C22P-3	65C22P-4

Following page has RMNC3 schematic. See kit's included documentation for schematics of optional components.

Don Rotolo, N2IRZ, lives in north eastern NJ with his wife and two kids. His ham radio activities include writing technical papers and articles, administrative roles in several radio clubs, VHF & Digital communications, linear circuits and PC board design. Don has several articles published in the Proceedings of the ARRL Digital Communications Conferences. For several years he ran a basement business supporting Amateur Radio digital networking called Amateur Networking Supply. Don also works as an electrical engineer for the US office of a major German auto manufacturer and has many German ham radio friends made during business trips to Europe.




RMNC3
Copyright (C) 1992 DK7WJ

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Eastern Ontario

April 17/99 v4.2

!CAN_ONTARIO_E_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Ottawa, Ontario

April 17/99 v4.2

backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes linked on non-2 meter radio channels.

For TheNET, G8BPQ, NOS, MSYS and NETROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links. These nodes are called "gateways".

- Dedicated Point-to-Point Backbone (only 2 radios on the channel) of known reliability.
- Multi-way HTS Free Backbone of known reliability.
- Via Repeater.
- Non HTS Free or unreliable backbone.
- 4800 — Denotes data rate of link, 1200 bps if not shown.
- (L) — Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r — RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

3 miles
5 km

Hull

Gloucester

to LC56K

7: VA3HUM: 145.07
Ottawa, ON - nos

Ottawa

OTTAWA: VE3OCR: 444.575+ (L)
Inydra: Internet gateway
hidden: VE3OCR-2: 220/ 440 56K rptr
Ottawa, ON - nos

Quebec

378007: VA3TCP: 145.03 bbs
Ottawa, ON - nos

Ontario

Nepean

7: VE3FD-7: 145.59 (L)
FDBBS: VE3FD |nos bbs
Nepean, ON - nos

56K

to VALLEY

to VA3DP

to NODICF

to GREELY

See Eastern Ontario Map #1

See Eastern Ontario Map #1

This map has been created by VE2BMQ using CorelDraw 3 graphics.
Node and Link information edited by VE2BMQ
Data from VE2BMQ and the network

!CAN_OTTAWA_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Southwestern Quebec

April 17/99 v4.2

This map has been created by VE2BMQ using CorelDraw 3 graphics.
Node and link information edited by VE2BMQ
Data from VE2BMQ and the network

This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes linked on non-2 meter radio channels.

For TheNET, G8BPQ, NOS, MSYS and NETROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links. These nodes are called "gateways".

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- Multi-way HTS Free Backbone of known reliability.
- Via Repeater.
- Non HTS Free or unreliable backbone.
- 4800 — Denotes data rate of link, 1200 bps if not shown.
- (L) — Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
- r — RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

20 km
12 miles

FFQNOD: VE2FFQ-1: 145.73
FFQBBS:VE2FFQ: fbb bbs
Gore, QC - g8

CRLNOD: VE2CRL-1: 145.59
CRLBBS: VE2CRL: fbb bbs
Blainville, QC - g8
CRALL

4800

STJDL: VE2CQL: 145.59
hidden: 220 MHz rptr
St-Joseph du Lac, QC - TheNET X1J4
CRALL

4800

to LAVAL

to LAVAL

see Montreal - Laval map #2C

WQC: VE2RM: 145.01 r
RIGAUD: VE2RM-4: rpt
Rigaud, QC - TheNET X1J4
VE2RM Inc.

4800

to DXNODE

to MTLBPQ

to TOYNOD to VE2CUA

to CORNWL

See Eastern ON Map #1

Ontario Quebec

CEVNOD: VE2CEV-1: 144.99 (L)
CEVNOD: VE2CEV-1: 145.53
CEVBBS: VE2CEV: fbb bbs
IPCEV: VE2CEV-2 jnos i'net g'way
Mercier, QC - g8 + jnos 1.11
CRASOI

HOWICK: VE2BMQ: no radio
Howick, QC - TheNET X1J4

Quebec, Canada

to MALONE

New York

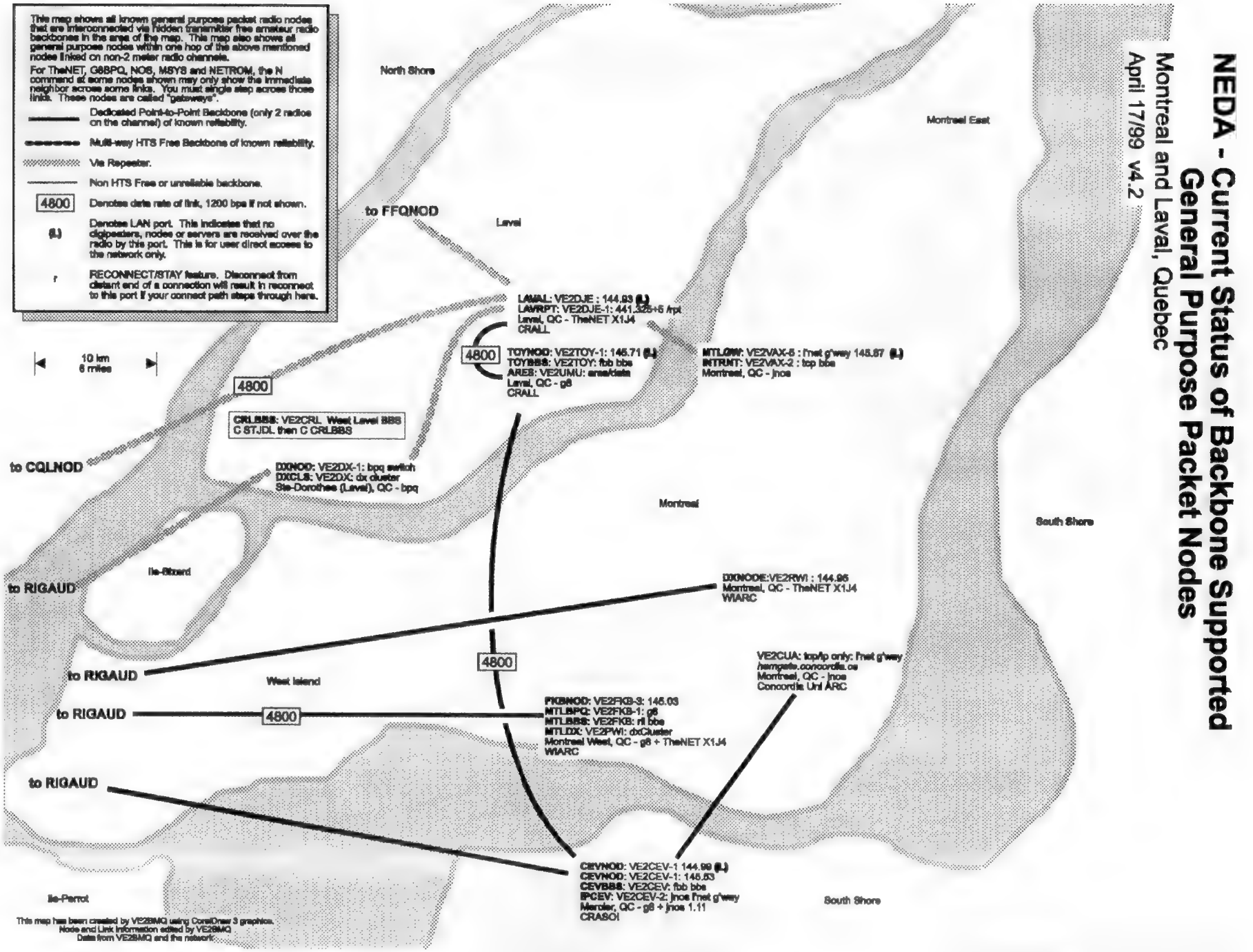
See Northern NY Map #5

USA

to RAND

Vermont

!CAN_QUEBEC_SW_042_2UBH.wmf



!CAN_MONTREAL_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

South East Ontario

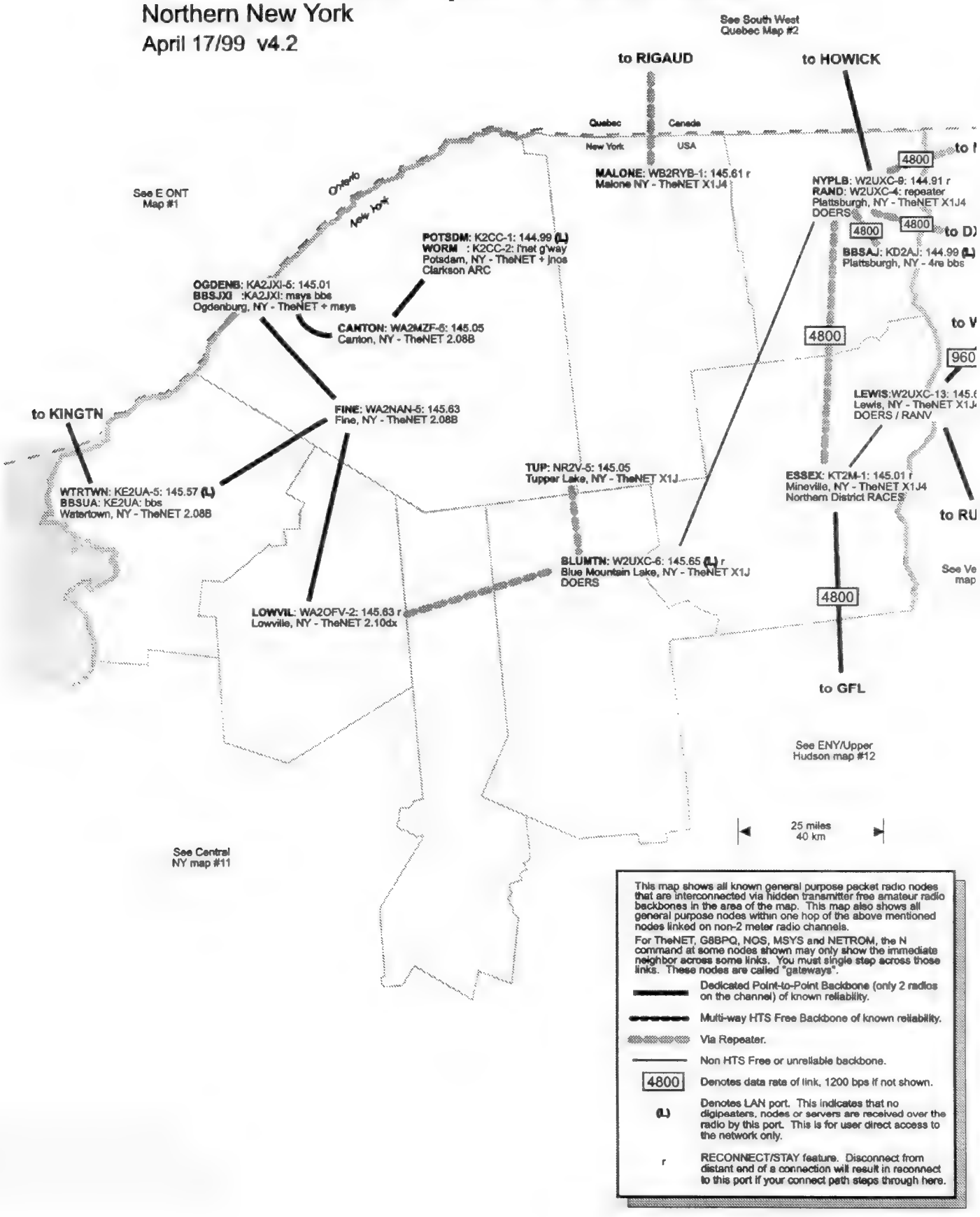
April 17/99 v4.2

!CAN_ONTARIO_SE_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Northern New York

April 17/99 v4.2



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For TheNET, G8BPQ, NOS, MSYS and NETROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links. These nodes are called "gateways".

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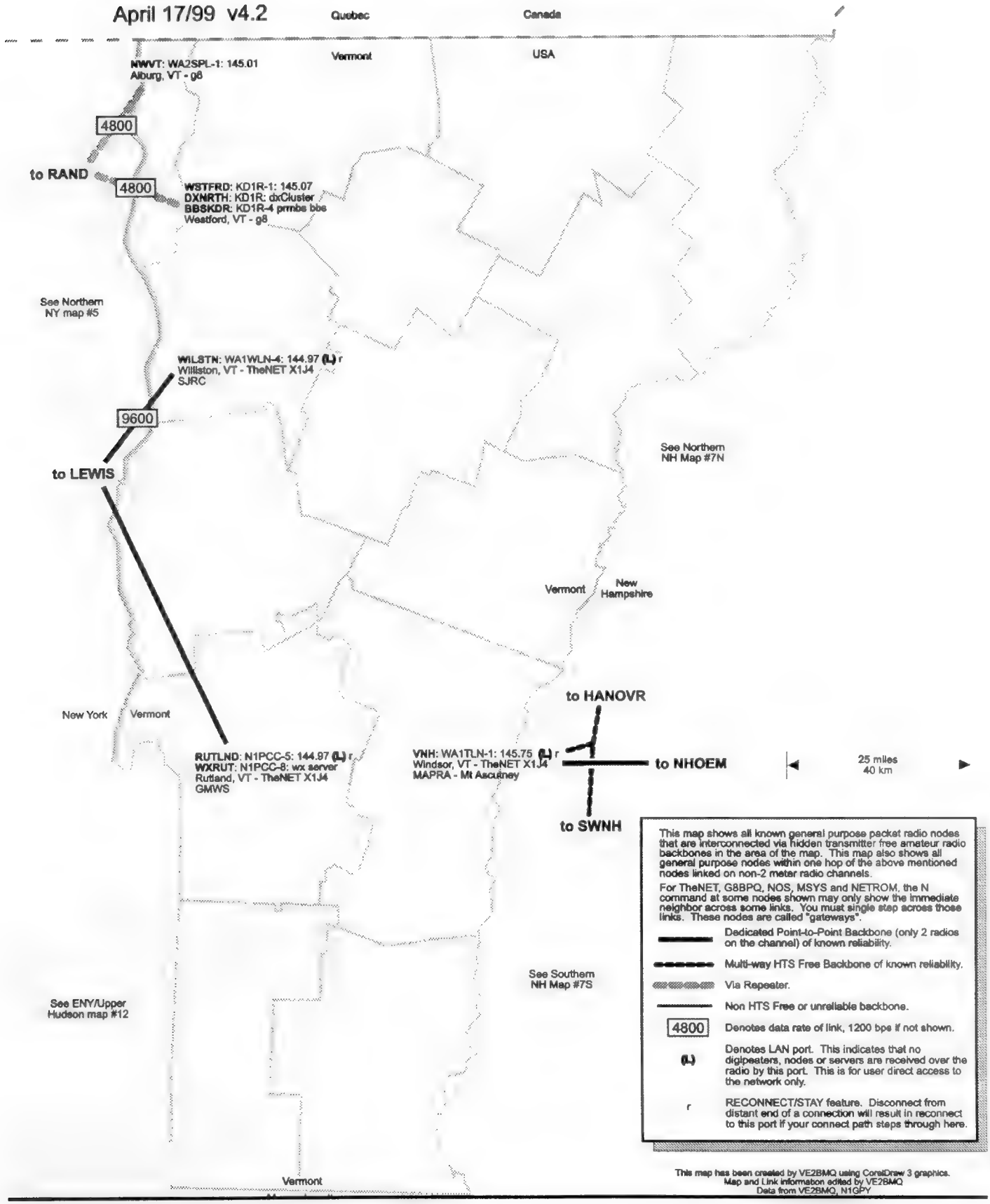
———	Multi-way HTS Free Backbone of known reliability.
≈≈≈	Via Repeater.
———	Non HTS Free or unreliable backbone.
4800	Denotes data rate of link, 1200 bps if not shown.
(L)	Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
r	RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

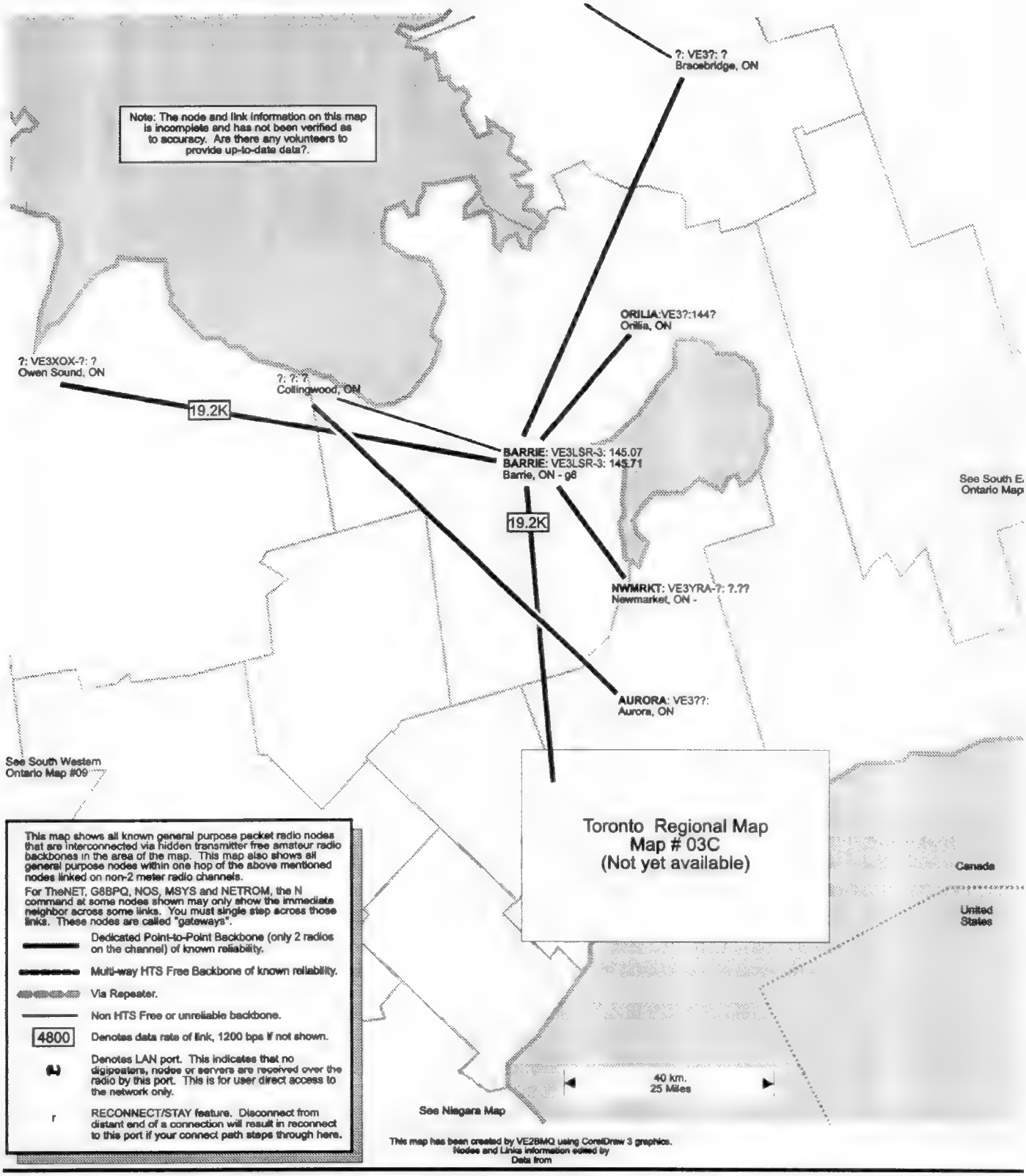
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

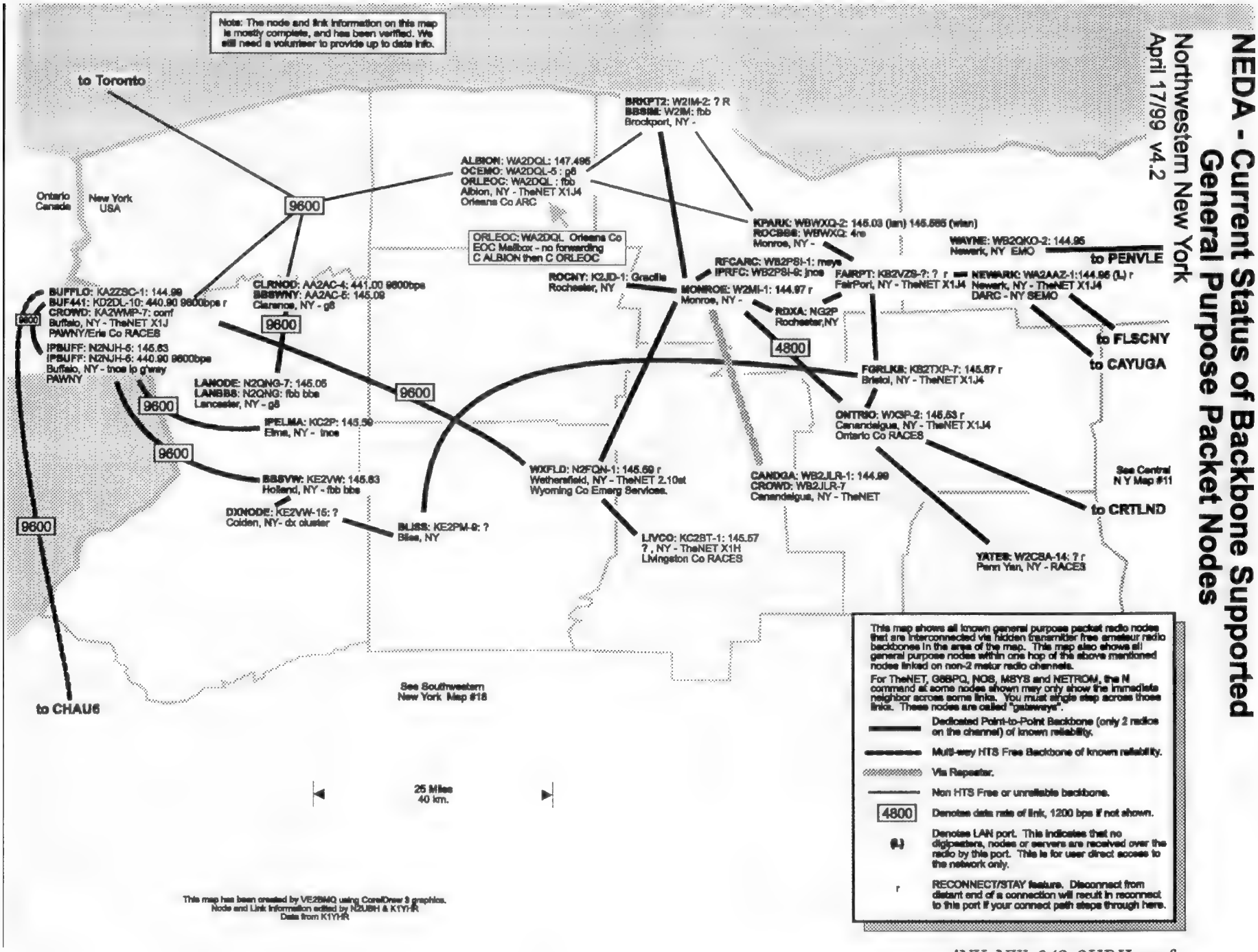


NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

South Central Ontario

April 17/99 v4.2





!NY_NW_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Southwestern New York

April 17/99

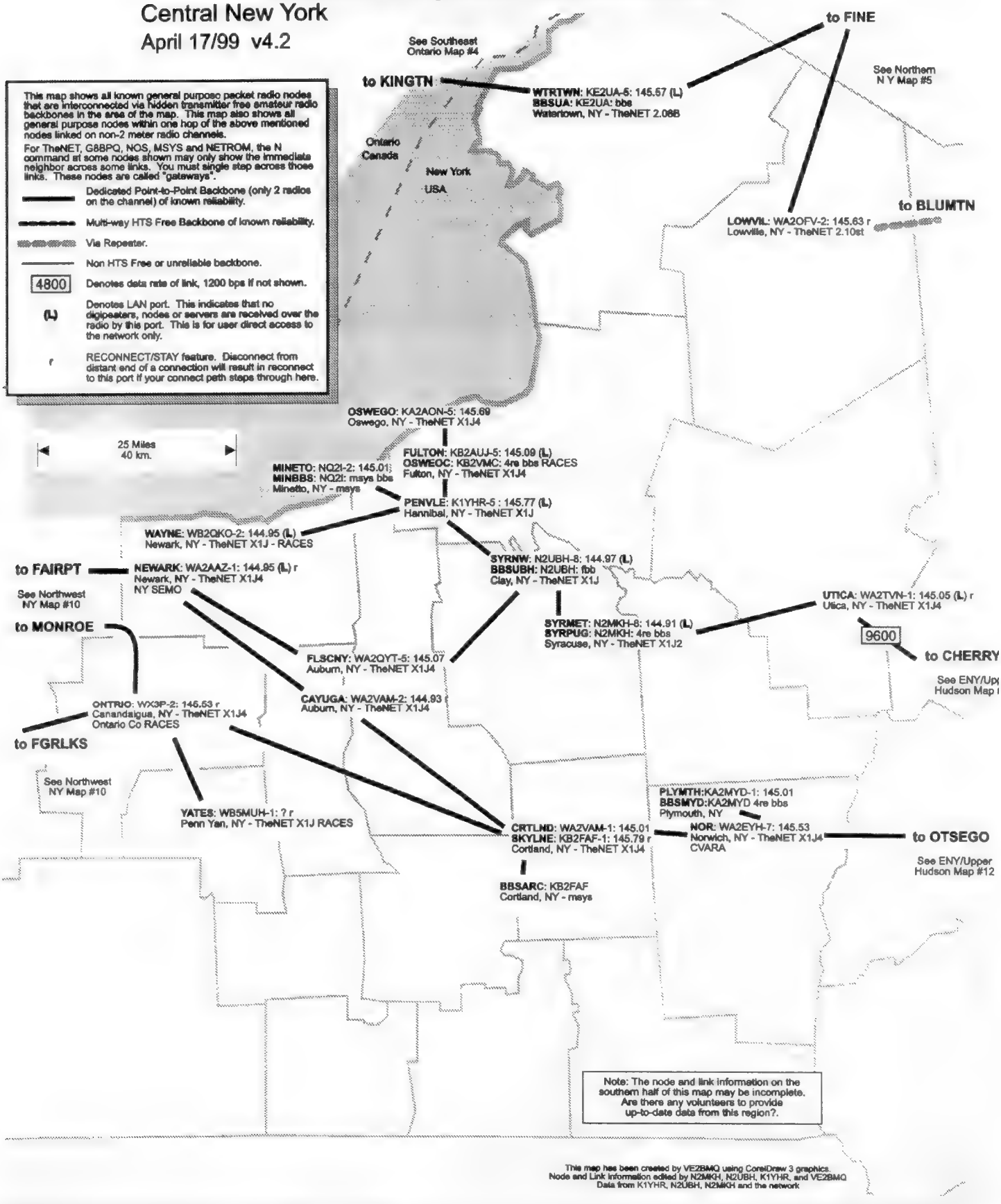
This map has been created by VE2BMQ using CorelDraw 3 graphics.
Node and Link information edited by (callsign)
Data from KA2DEW

!NY_SW_042_2UBH.wmf

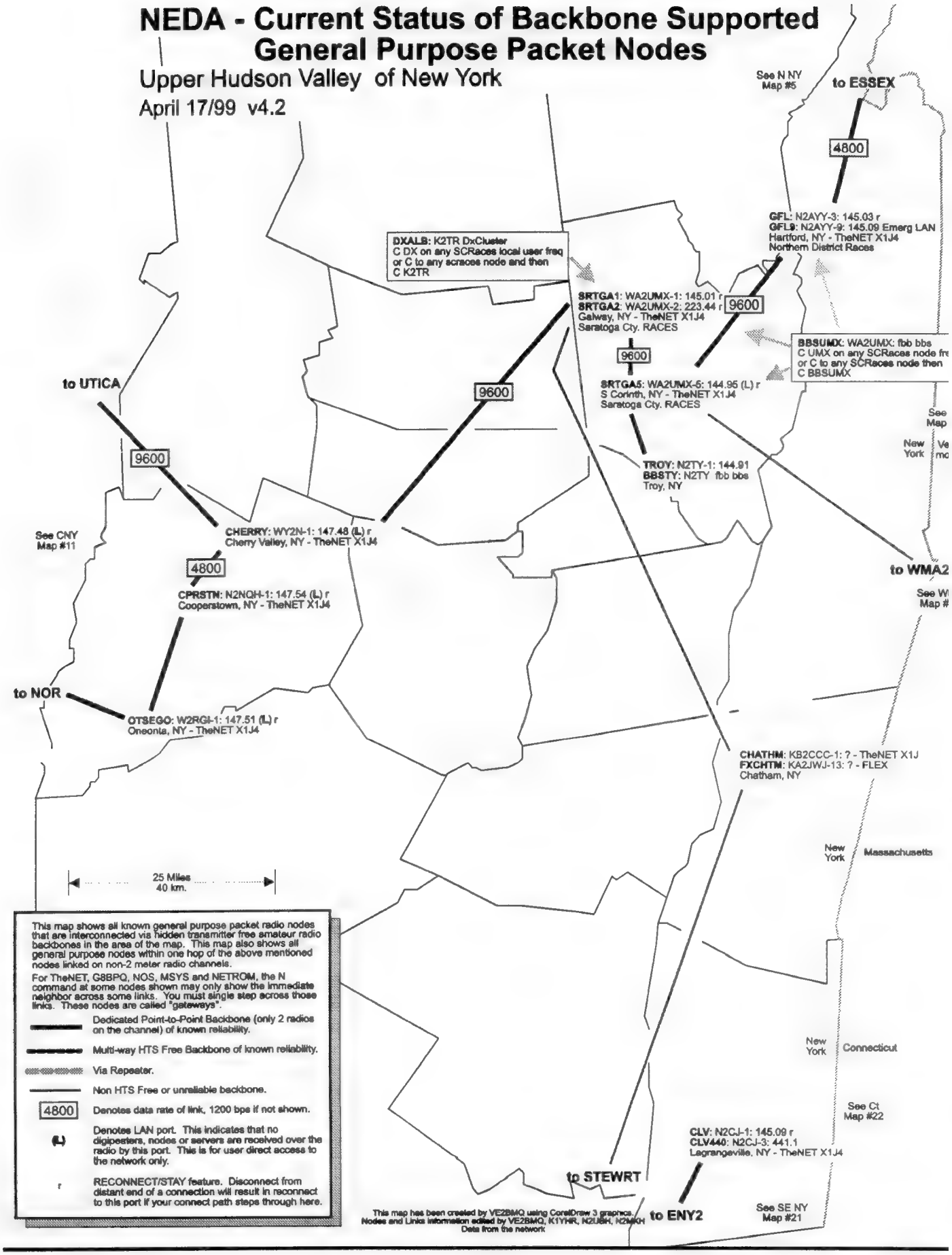
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Central New York

April 17/99 v4.2



!NY CNY 042 2UBH.wmf


NEDA - Current Status of Backbone Supported General Purpose Packet Nodes
Upper Hudson Valley of New York
April 17/99 v4.2
See N NY Map #5
to ESSEX
4800
GFL: N2AYY-3: 145.03 r
GFL9: N2AYY-9: 145.09 Emerg LAN
Hartford, NY - TheNET X1J4
Northern District Races
DXALB: K2TR DxCluster
C DX on any SCRaces local user freq
or C to any scraces node and then
C K2TR
SRTGA1: WA2UMX-1: 145.01 r
SRTGA2: WA2UMX-2: 223.44 r
Galway, NY - TheNET X1J4
Saratoga Cty. RACES
9600
BBSUMX: WA2UMX: fbb bbs
C UMX on any SCRaces node fr
or C to any SCRaces node then
C BBSUMX
SRTGA5: WA2UMX-5: 144.95 (L) r
S Corinth, NY - TheNET X1J4
Saratoga Cty. RACES
to UTICA
9600
TROY: N2TY-1: 144.91
BBSTY: N2TY fbb bbs
Troy, NY
See CNY Map #11
CHERRY: WY2N-1: 147.48 (L) r
Cherry Valley, NY - TheNET X1J4
4800
CPRSTN: N2NQH-1: 147.54 (L) r
Cooperstown, NY - TheNET X1J4
to WMA2
to NOR
OTSEGO: W2RGI-1: 147.51 (L) r
Oneonta, NY - TheNET X1J4
CHATHM: KB2CCC-1: ? - TheNET X1J
FXCHTM: KA2JWJ-13: ? - FLEX
Chatham, NY
New York
Massachusetts
25 Miles
40 km.
This map shows all known general purpose packet radio nodes that are interconnected via hidden transmitter free amateur radio backbones in the area of the map. This map also shows all general purpose nodes within one hop of the above mentioned nodes linked on non-2 meter radio channels.
For TheNET, G8BPQ, NOS, MSYS and NETROM, the N command at some nodes shown may only show the immediate neighbor across some links. You must single step across those links. These nodes are called "gateways".
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Multi-way HTS Free Backbone of known reliability.
Via Repeater.
Non HTS Free or unreliable backbone.
4800
Denotes data rate of link, 1200 bps if not shown.
(L)
Denotes LAN port. This indicates that no digipeaters, nodes or servers are received over the radio by this port. This is for user direct access to the network only.
r
RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.
New York
Connecticut
See Ct Map #22
CLV: N2CJ-1: 145.09 r
CLV440: N2CJ-3: 441.1
Lagrangeville, NY - TheNET X1J4
to STEWRT
to ENY2
See SE NY Map #21
This map has been created by VE2BMQ using CorelDraw 3 graphics.
Nodes and Links information edited by VE2BMQ, K1YHR, N2UBH, N2MKH
Data from the network

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

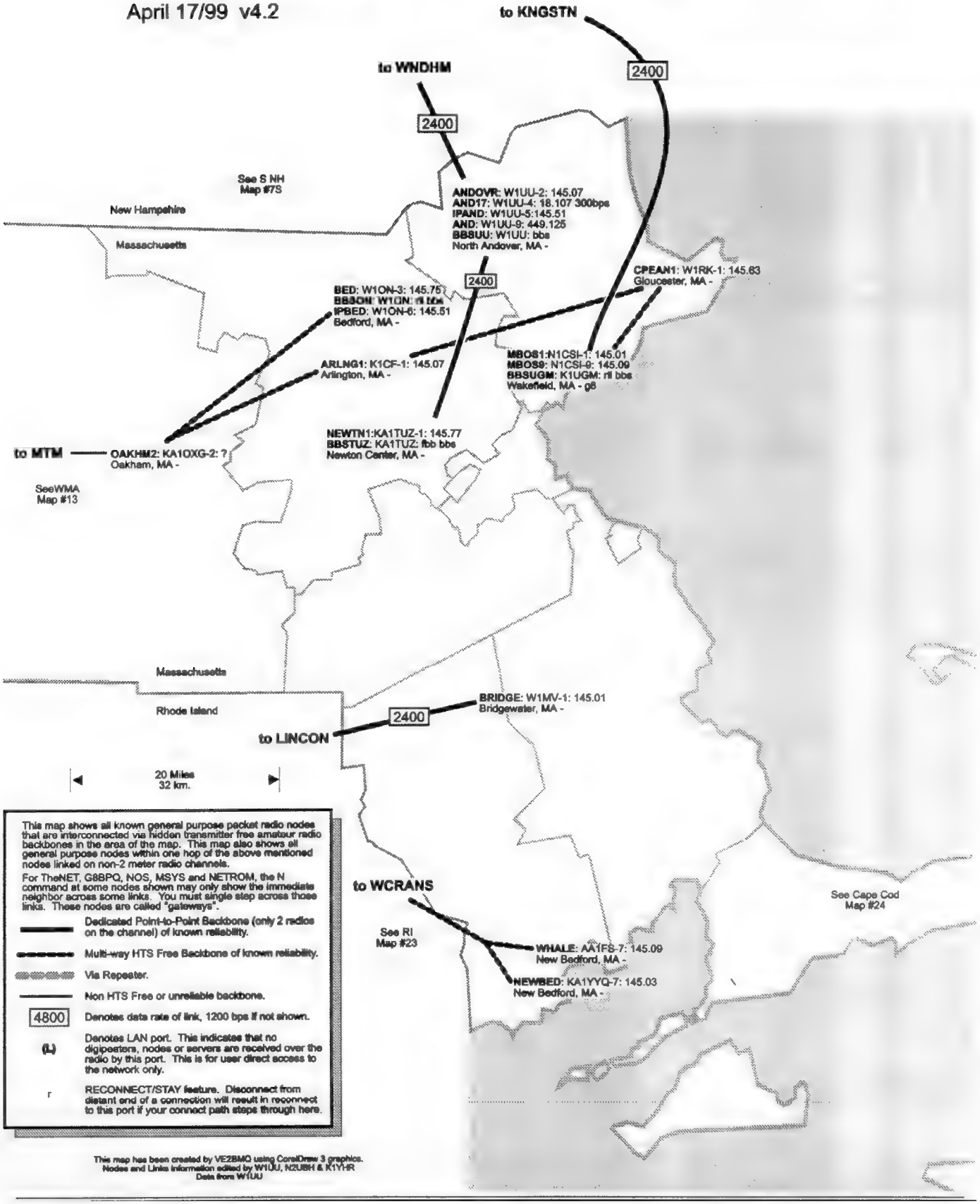
Western Massachusetts

April 17/99 v4.2

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Eastern Massachusetts

April 17/99 v4.2



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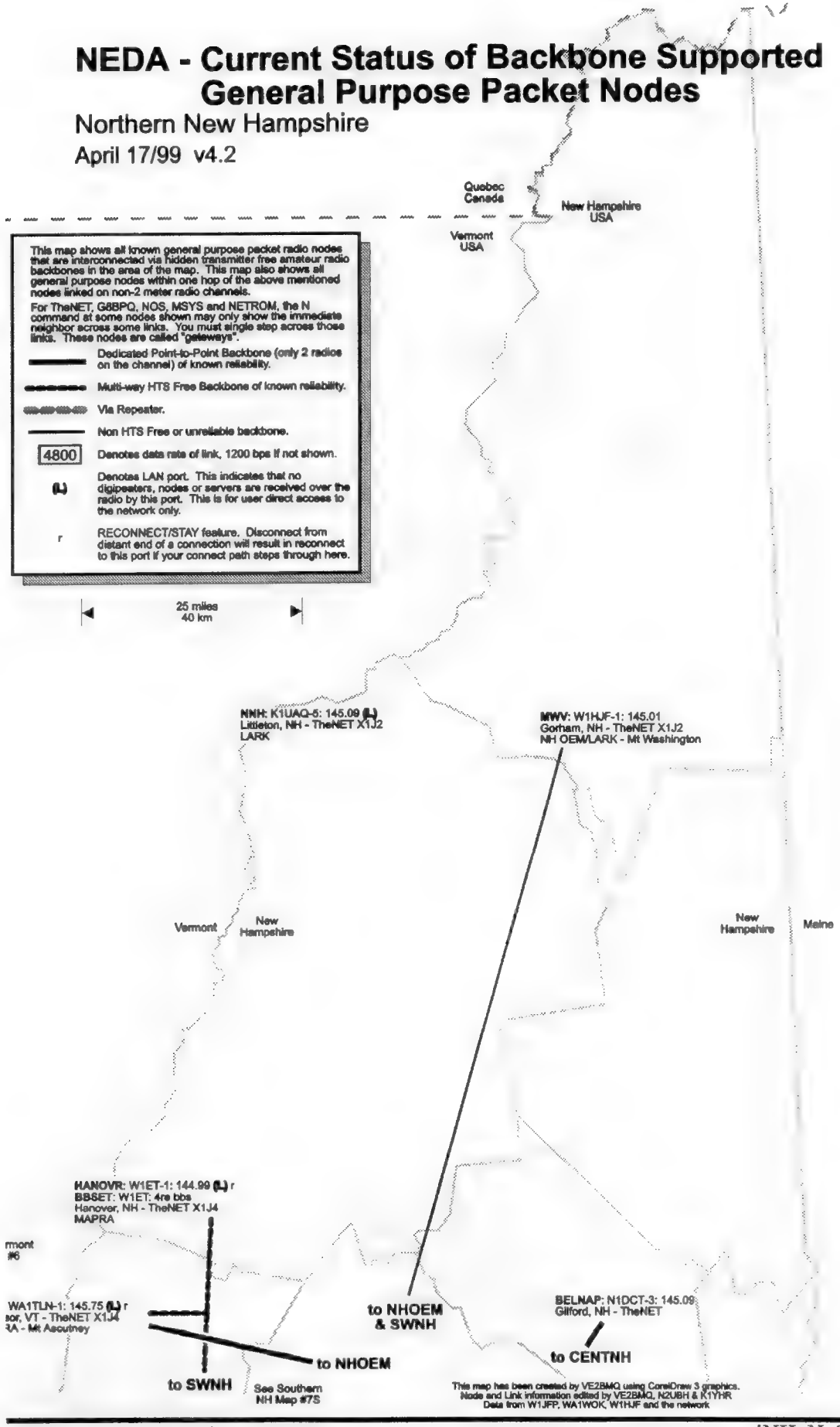
- r — RECONNECT/STAY feature. Disconnect from distant end of a connection will result in reconnect to this port if your connect path steps through here.

This map has been created by VE2BMO using CorelDraw 3 graphics.
Nodes and Links information edited by W1UU, N2UBH & K1YHR
Data from W1UU

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Northern New Hampshire

April 17/99 v4.2



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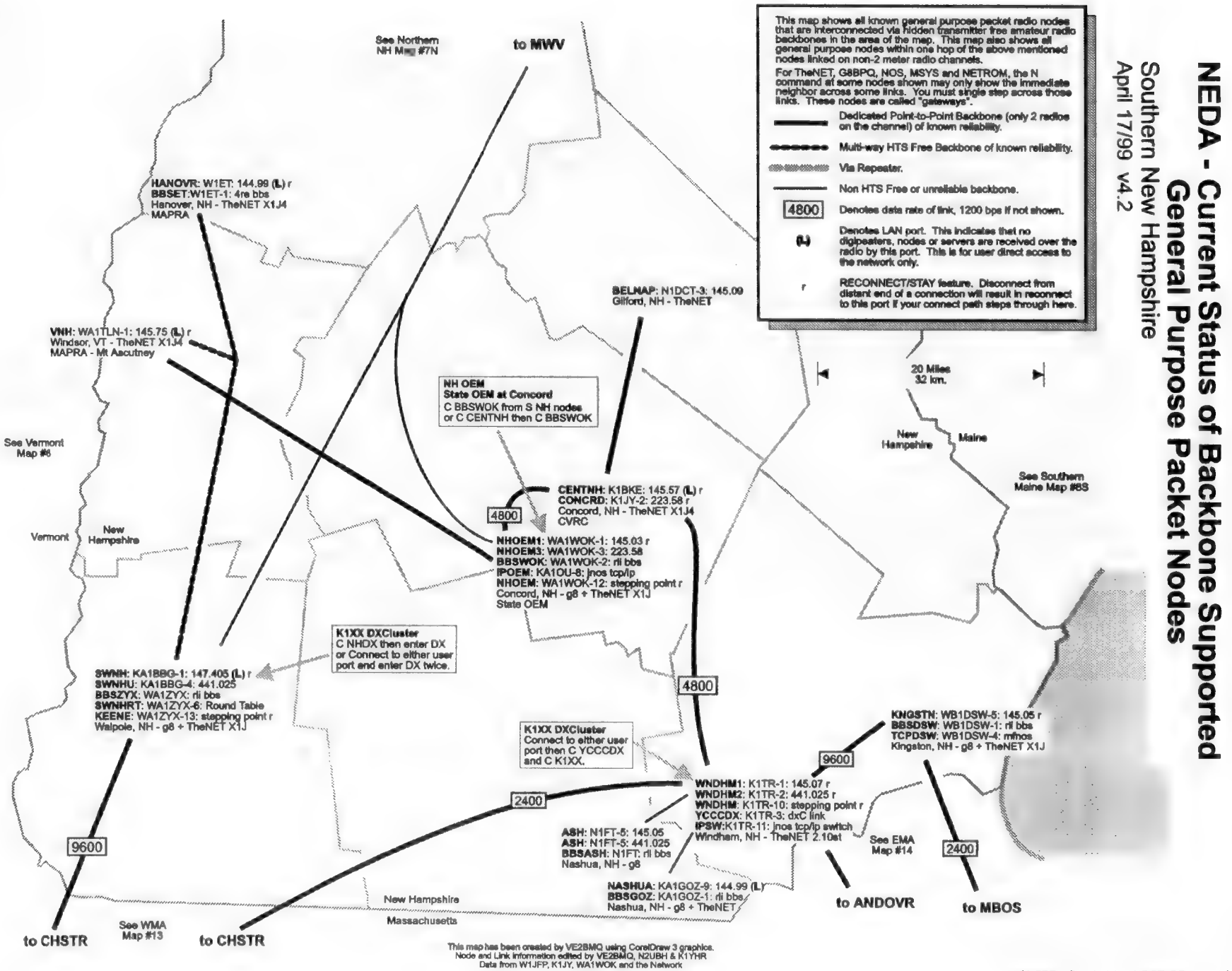


!NH_S_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Southern Maine

April 17/99 v4.2

!ME_S_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Cape Cod, Massachusetts

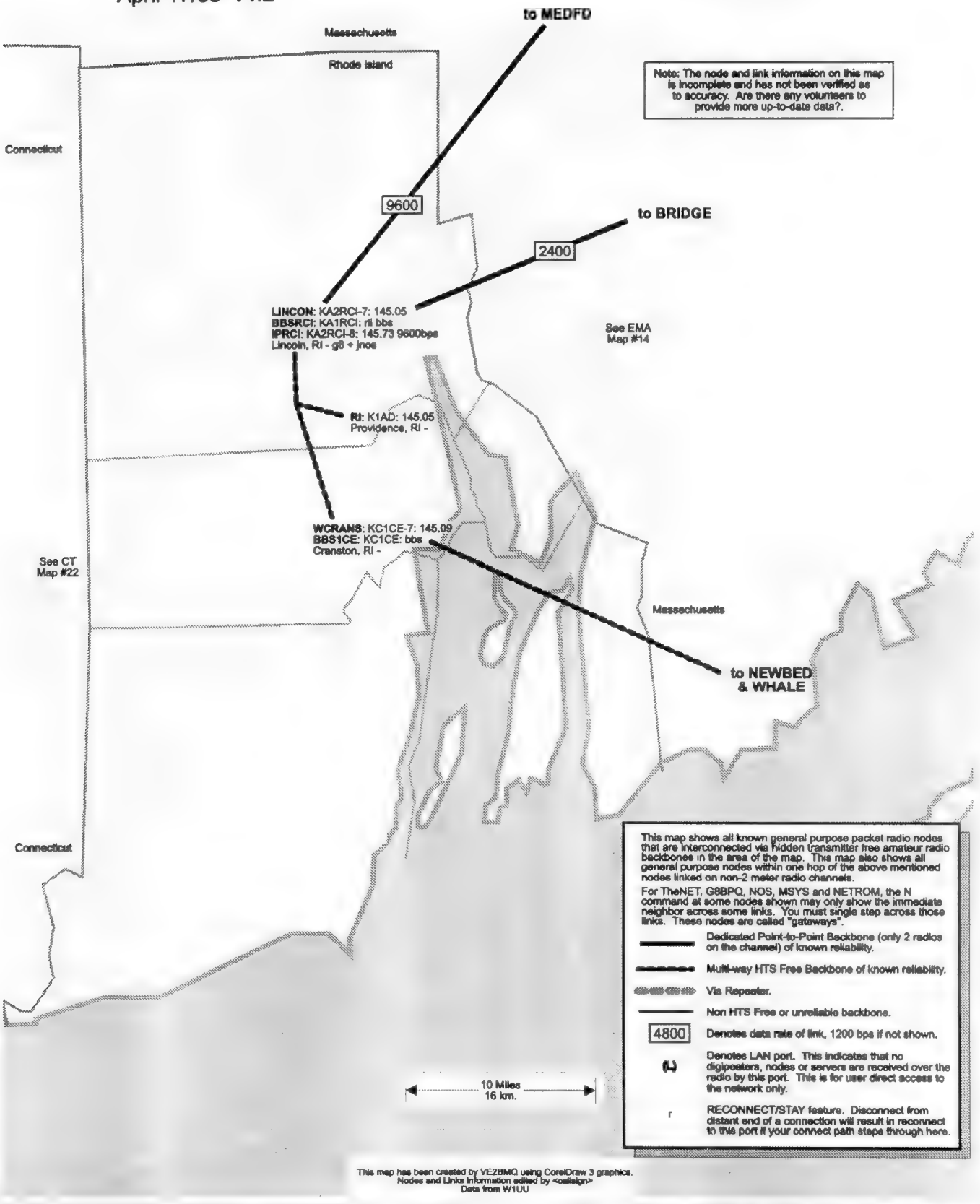
April 17/99 v4.2

!MA_CC_042_2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

Rhode Island

April 17/99 v4.2

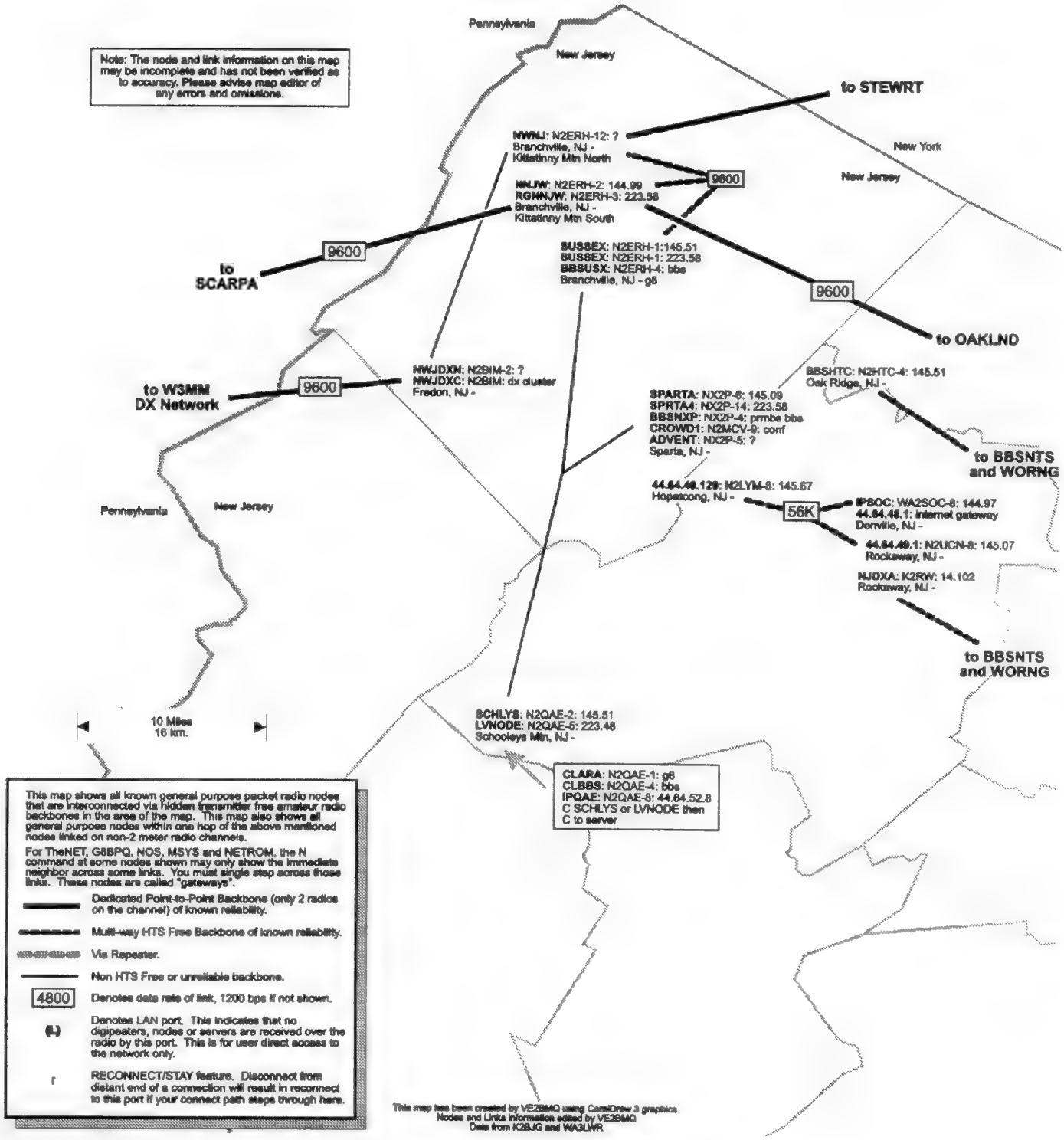


!RI_042 2UBH.wmf

NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

North West New Jersey

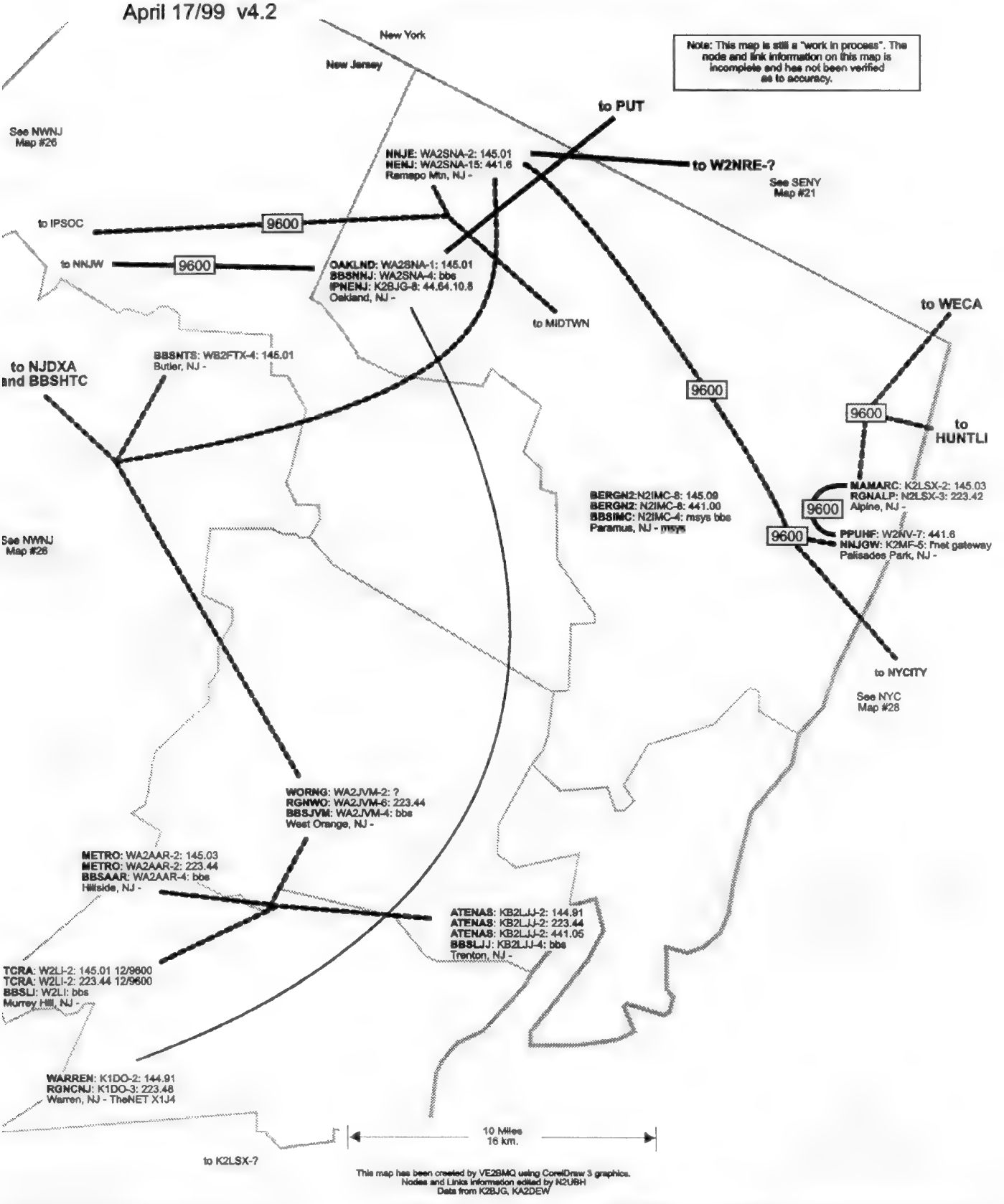
April 17/99 v4.2



NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

North East New Jersey

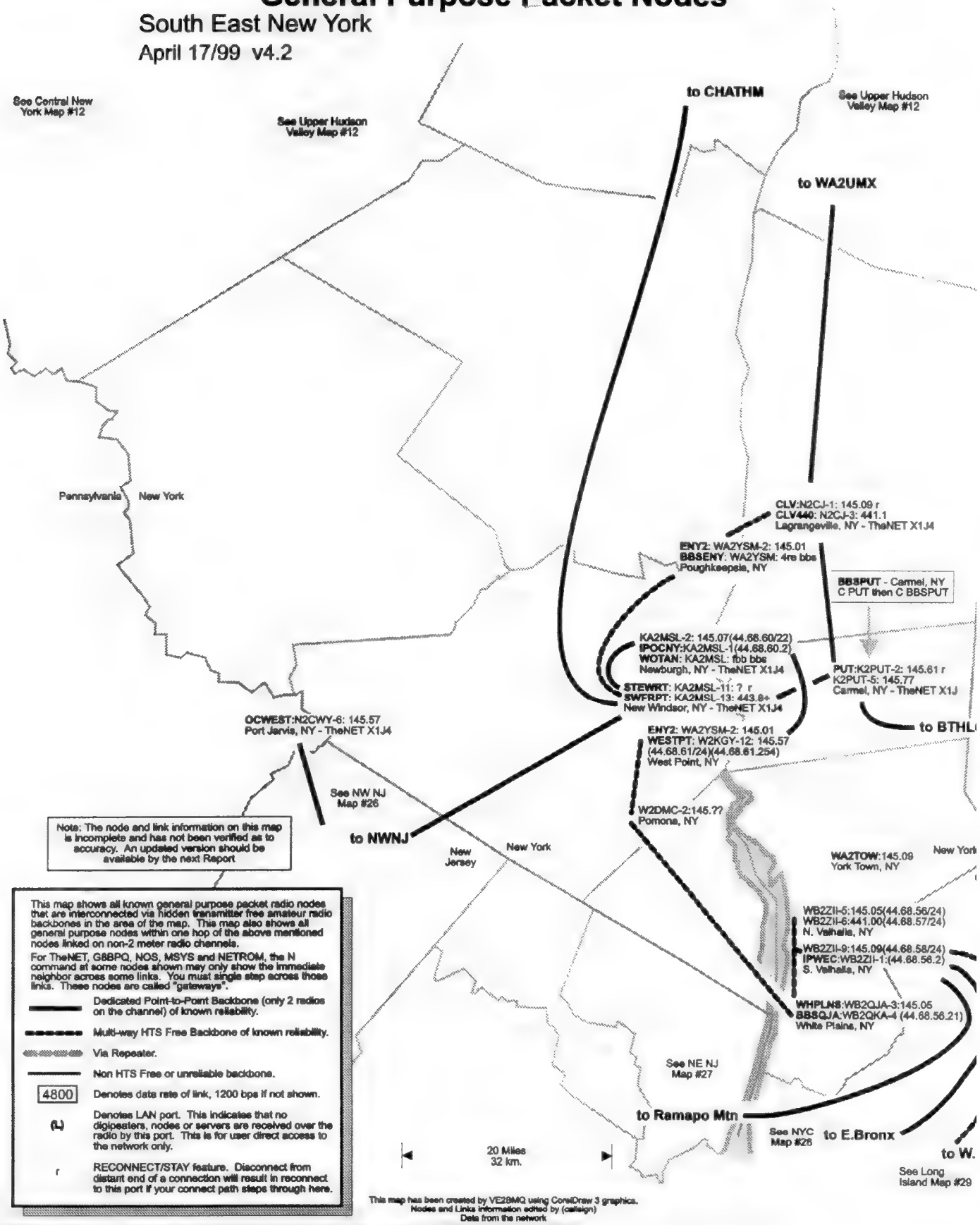
April 17/99 v4.2



NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

South East New York

April 17/99 v4.2



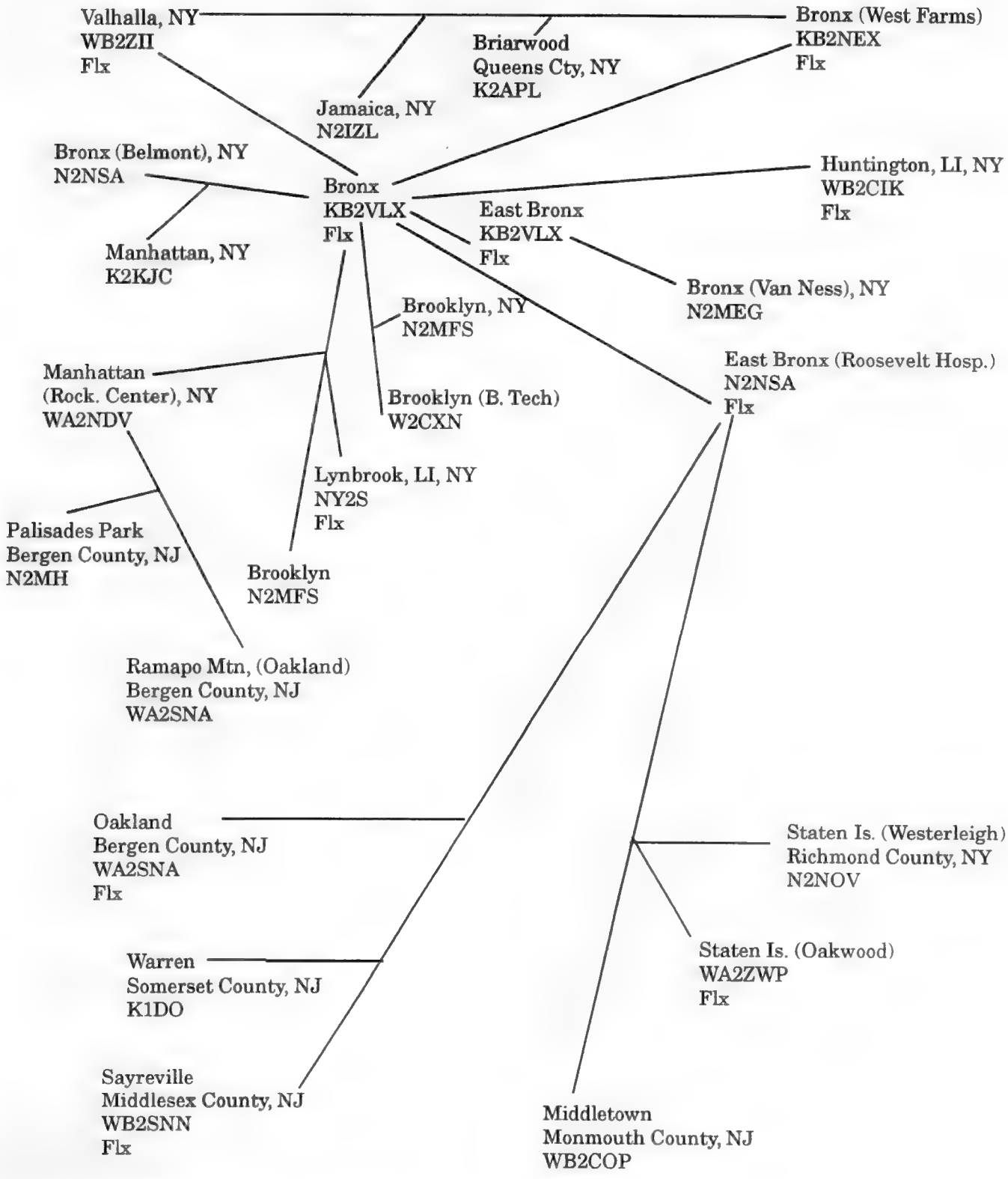
NEDA - Current Status of Backbone Supported General Purpose Packet Nodes

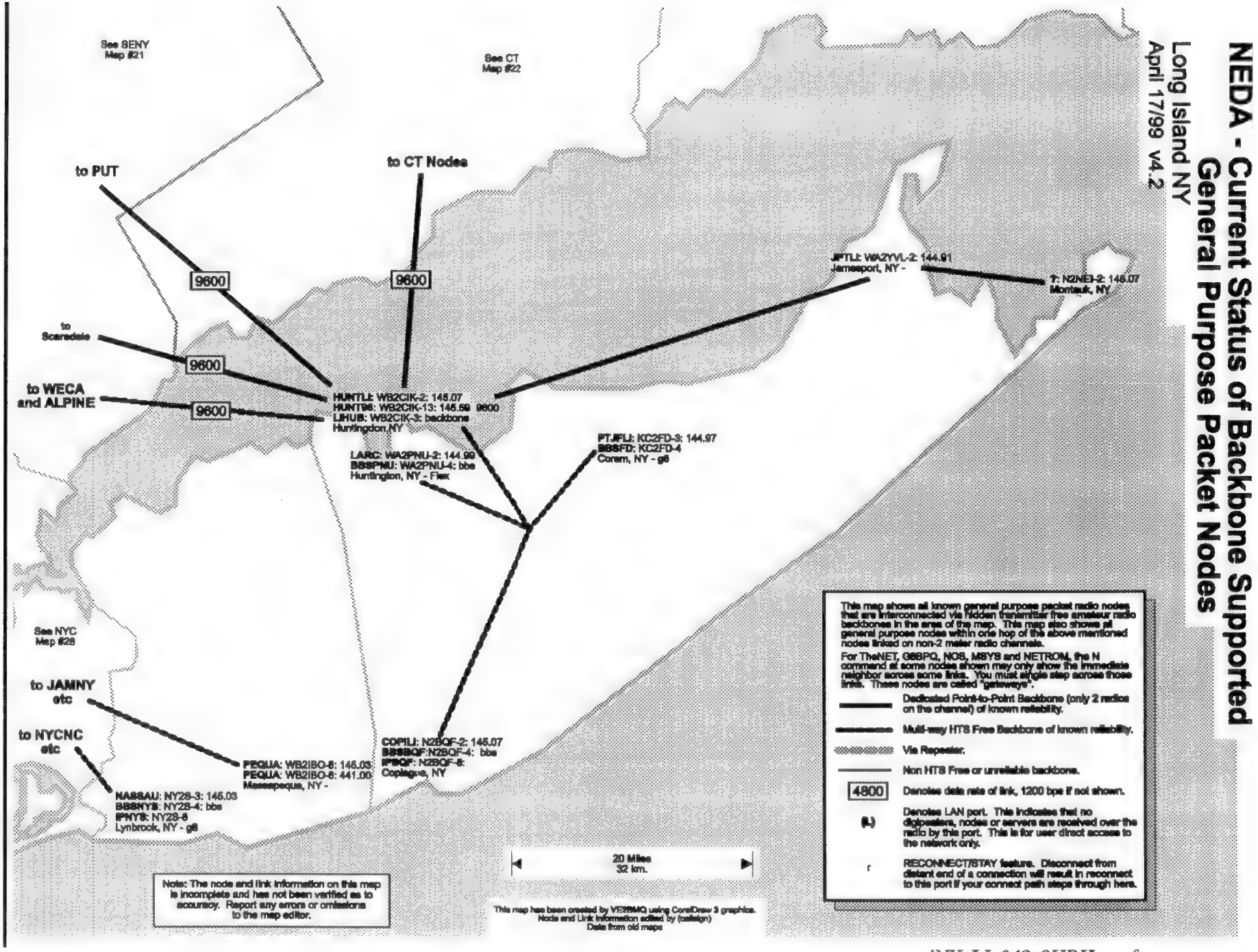
Connecticut
April 17/99 v4.2

!CT_042_2UBH.wmf

New York City Packet Radio Node Map

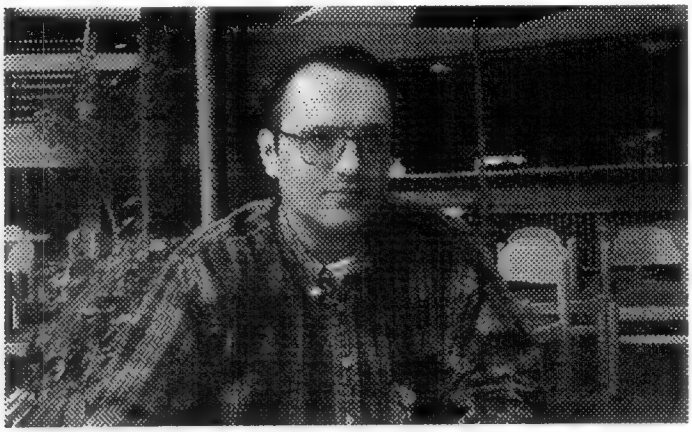
Based on data supplied by K2BJG - Jan 1999 - map drawn by KB2TNR.





!NY_LI_042_2UBH.wmf

John Kushneir, N2UBH
John is from Syracuse NY. He has been instrumental in making the central New York packet radio network the best part of the north east TheNET packet network. John is the man responsible for the maps. He's updated many of them so far and is working on the rest. See article below.



Map Report

The preceding 20 odd pages have the NEDA maps. There are a few more pages with insufficient or very old data that I didn't include. We're looking for people to go out and log the network. See the article on the right.

Our NYC NEDA-ish map is not done. We included the map that Nancy-KB2TNR did for the last issue just to fill in. Hopefully by the next issue of the Quarterly we'll have a NYC map.

Some of these maps are based on data that was collected years ago by local volunteers and by VE2BMQ working from Montreal. Most of our efforts were from the Syracuse area although we had lots of help. K1MEA supplied us info for his area, Dave-K1YHR did a huge amount of logging from Syracuse, and K2BJG supplied his local text-based maps. (*Editor's Note: John and I discussed this article on the phone and I neglected to write down some of the callsigns! Sorry about that. We'll get a better list of helpers for the next issue*)

In following issues the map date and version number will be different. We're going to try to date the map based on when the information was submitted and the version numbers will be changed when the map is actually worked on.

Thanks for any support you can give!

—N2UBH - the map guy

Congratulations on the great job Dave and John! (K1YHR and N2UBH) and thanks to all who helped!! - editor

Can you help with Maps?

There are two processes that we need to take place. One is a process we need done, the other is development to simplify the process.

The Process

We create our maps from a network survey. The map created from log files of actual network commands.

Log File

- For a TheNET, that log file should contain:
  - the infotext,
  - node name from each user port,
  - callsign from each user port,
  - nodes list, from each user port, and
  - routes from each of the backbone ports.
- For a G8BPQ node the log should contain:
  - the node name,
  - nodes list, and
  - routes from the node.
- For a FlexNet the log should contain:
  - the node location,
  - callsign,
  - destinations table, and
  - links from the node.

It helps the map making process to start with all of the log files already accumulated. A volunteer should gather the log files from local nodes and forward them to somebody who wields the graphics program. (NEDA bought all of the map makers their own copy of a graphics program several years ago.)

Draw Map

From the log file a map is created or updated. The map is drawn to show the backbones between the nodes, as shown on each map. See the inset box on that map for a list of link types that are shown. We were using Aldus Freehand (now owned by Macromedia) until 1993 or so when we switched to CorelDraw.

Development

What we really need, is a program that runs on a personal computer, and that connects from a user's station out into the network, and that gathers the log file specified above. This should be pretty easy in C++ or possibly even BASIC.

Anybody got time for a nifty project? If you wonder how much this project would be appreciated, think of the names of the BBSs out there. W0RLI? F6FBB? G8BPQ? So... create your node logger software and call it YOURCALL. I promise you we'll forever refer to it by your callsign!

—NEDA Editor, Tadd, KA2DEW

Tidbits from New Jersey/ NYmetro

John N2NSA reports that his Roosevelt Hospital mid-town Manhatten FlexNet node has been running without any problems for 164 days (as of this writing). Note that it would have been longer. It is showing every indication of never crashing. That is since it was converted to PC/Flexnet

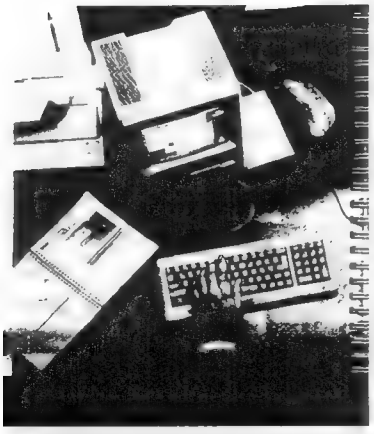
.

Report received from Bob NY2M that his nodes site will complete the FlexNet conversion this week. That is WA2ZWP at Staten Island, NY.

Art, N2QAE expects to complete FlexNet conversion this weekend. That is Schooleys Mountain and Long Valley WCNJ.

The next two are WA3LWR at Scranton, PA and K3YTL at Wilkes-barre, PA are scheduled for May 1999.

—K2BJG



FlexNet Network Destinations in the Greater NYC Region

Rev. 04/13/99 - submitted by K2BJG

call	ssid	user	pc notes	area	location
K1DO	3-3	144.91	NR to wb2snn	CNJ	Warren, Somerset Cty, NJ
K1DO	12-12	144.91	NR to nsa,sna,snn	CNJ	Warren, Somerset Cty, NJ
K1EIC	12-12	223.46	NR to SCT chan	SCT	Orange, New Haven Cty, CT
K1EIC	13-13	223.58	NR to k1uol	SCT	Orange, New Haven Cty, CT
K1IMD	2-7	144.91	FX	ELI	Jamesport, Suffolk Cty, NY
K1UOL	2-15	145.03	FX -4=BBS-0=WL	WCT	Bethel, Fairfield County, CT
K2ADJ	1-1	144.99	NR to k2ul	SNJ	Edgewater Pk, Burlingtonm Cty, NJ
K2APL	12-12	?	NR to kb2nex	NYC	Briarwood, Queens Cty, NY
K2BJG	2-8	------	FX sna-4=BBS-8=NOS	NEJ	Oakland, Bergen County, NJ
K2KJC	2-2	145.01	NR to kb2vlx	NYC	Manhattan, New York Cty, NY
K2LSX	14-14	145.03	NR to zii & cik	NEJ	Alpine, Bergen Cty, NJ
K2PUT	0-15	145.61	FX -4=BBS	SENY	Mt Ninham, Carmel, Putnam Cty, NY
KA1YIQ	0-15	441.05	FX -4=wb1cqo bbs	SCT	Norwalk, Fairfield County, CT
K2UL	0-15	145.07	FX -4=BBS	SNJ	Hamilton Square, Mercer Cty, NJ
KA2JWJ	13-13	144.99	NR to ka2msl	SENY	Chatham, Columbia County, NY
KA2MSL	2-7	145.07	FX -0=BBS	SENY	Newburgh, Orange County, NY
KA2MSL	8-15	------	FX -0=BBS	SENY	New Winsor, Orange County, NY
KA2UGQ	3-3	145.01	NR to wa2sna	CNJ	Berkeley Hts. Union County, NJ
KB1BZP	10-10	?	NR to k1imd	SCT	Groton, New London County, CT
KB2NEX	0-15	145.05	FX -4=BBS-8-NOS	NYC	W Farms area, Bronx Cty, NY
KB2VLX	0-15	145.51	FX -4=BBS-1=NOS	NYC	East Bronx County, NY
KC2FD	3-3	144.97	NR to wb2cik	LI	Port Jefferson, Suffolk Cty, NY
N2BIM	0-4	145.73	FX -0 DXC	NWJ	Fredon, Sussex County, NJ
N2BIM	12-14	144.91	FX -0 DXC	NWJ	Branchville, Sussex County, NJ
N2BQF	0-14	145.07	FX to wb2cik	LI	Copiague, Suffolk Cty, NY
N2CJ	3-3	?	NR to ka2msl	SENY	Clove Mtn, Dutchess County, NY
N2IRZ	0-7	145.01	FX to wa2sna	NEJ	River Vale, Bergen Cty, NJ
N2IZL	11-11	145.05	NR to kb2vlx	NYC	Jamaica, Queens Cty, NY
N2IZL	12-12	145.05	NR to kb2vlx	NYC	Jamaica, Queens Cty, NY
N2MFS	2-2	145.01	NR to kb2vlx	NYC	Brooklyn, Kings Cty, NY
N2NOV	2-2	145.77	NR to kb2vlx	NYC	Staten Island, Richmond, Cty, NY
N2NSA	1-8	------	FX -4=BBS	NYC	Bronx County, NY
N2NSA	9-15	------	FX -4=BBS	NYC	Manhattan, New York Cty, NY
N2QAE	3-3	145.51	NR to w2lv	WCNJ	Schooleys Mtn, Morris County, NJ
N2QAE	5-5	145.51	NR to wb2snn	WCNJ	Schooleys Mtn, Morris County. NJ
N2SMV	12-12	145.54	NR to wb2snn	CNJ	Manalapan, Monmouth Cty, NJ
N4GAA	14-14	145.05	NR to wb2cik	SCT	Orange, New Haven Cty, CT
NY2LI	0-7	145.05	FX to wb2cik	LI	Yaphank, Suffolk Cty, NY
NY2S	0-10	145.09	FX -4=BBS	LI	Lynbrook, Nassau County, NY
NY2S	12-12	145.63	NR to kb2vlx	NYC	Rock Ctr, Manhattan New York Cty, NY
W1GB	12-12	145.09	NR to n1imd	SCT	Hamden New Haven Cty, CT
W1GB	13-13	145.09	NR to k1imd	SCT	Hamden New Haven Cty. CT
W1QI	0-0	145.07	NR to k1uol	SCT	Newtown, Fairfield County, CT
W2DMC	2-2	?	NR to wb2zii	SENY	Ponoma, Rockland Cty. NY
W2HOB	3-3	------	NR to k2ul	SNJ	Waterford Works, Camden Cty, NJ
W2EMU	5-5	145.05	NR to wb2snn	CNJ	Bridgewater, Somerset Cty, NJ
W2JT	0-15	144.93	NR DXC to wa2sna	NEJ	West Caldwell, Essex Cty, MJ
W2LI	2-2	145.01	NR to wa2sna	NEJ	Murray Hill, Union Cty, NJ
W2LV	0-14	144.99	FX -4=BBS-1=NOS	NWJ	Branchville, Sussex County, NJ
W2MW	3-3	145.51	NR to wa2sna	NEJ	Oak Ridge, Morris Cty, NJ
W3BI	0-0	144.97	NR to w2lv	EPA	Nazareth, Northhampton Cty, PA
WA2FNQ	0-15	145.05	FX -4=BBS	LI	Northport, Suffolk, Cty, NY
WA2PNU	0-13	145.99	FX -4=BBS	LI	Huntington, Suffolk, Cty, NY
WA2SNA	0-14	145.01	FX -4=BBS-1=NOS	NEJ	Ramapo Mtn, Oakland, Bergen Cty, NJ
WA2TOW	2-2	??	NR to wb2zii	SENY	York Town, Westchester Cty, MY
WA2ZWP	3-3	145.55	NR to kb2vlx	NYC	Staten Island Richmond Cty, NY
WA3LWR	6-6	145.01	NR to w2lv	NEPA	Scranton, Lackawanna, Cty, PA
WB1CQO	0-6	145.09	FX -4=BBS	SCT	Bridgeport, Fairfield, Cty, CT
WB1CQO	7-7	441.05	NR to wb1cqo	SCT	Fairfield, Fairfield, Cty, CT
WB2CIK	0-14	145.07	FX -1=NOS	LI	Huntington, Suffolk, Cty, NY
WB2COP	2-2	multi	NR to wb2snn	JS	Middletown, Monmouth Cty, NJ
WB2FTX	3-3	145.01	NR to wa2sna	NEJ	Butler, Morris Cty, NJ
WB2QJA	3-3	145.05	NR to wb2zii	SENY	White Plains, Westchester Cty, NY
WB2QJA	4-4	145.05	NR to wb2zii	SENY	White Plains, Westchester Cty, NY
WB2SNN	0-9	145.51	FX -4=BBS	CNJ	Sayreville, Middlesex Cty, NJ
WB2ZII	1-1	------	NOS to wb2zii	SENY	S Valhalla, Westchester, NY
WB2ZII	2-6	145.05	FX wb2qja=BBS	SENY	N Valhalla, Westchester, NY
WB2ZII	7-15	145.09	FX wb2qja=BBS	SENY	S Valhalla, Westchester, NY

North East Flea Market Dates

From: finberg@draper.com http://mit.edu/w1gsl/Public/ne-fleas

2 May Yonkers NY **Metro70** @LincolnHS $6@9 $25/T@7 ..... Otto WB2SLQ 914 969 1053 F
7,8 May Rochester NH **Hoss Traders** @FG x13 rt16 ..... Joe K1RQG 207 469 3492
10 May Greenfield MA **FCARA** Mon 6PM @WESCO $3/tg ..... Richard KD1XP 413 665 2211 +
14,15 May Dayton OH **Hamvention** ..... http://www.hamvention.com
15 May **Forestdale** RI RIAFMRS @VFW rt146 8A flea+auct ..... Rick K1KYI 401 725 7507
16 May Flea at **MIT** ..... Nick 617 253 3776 F
22 May Londonderry NH **IRS** @Lions In+Out $10@6 $2@8 ..... Paul K1LL 603 432 1538
29 May Vernon CT NARC@**TollandAgC** I84x67 $3@9 $15/T@6:30 ..... Wayne 860 487 1921
30 May Sorel-Tracy PQ **HamfestduQuebec** $15/T@6 $5@9 ..... Jean VE2JCE 514 587 2986
4-6 June **Rochester** NY **ARRL Atlantic** Conv ..... Harold K2HC 716 424 7184 A
5 June Herman ME **PineStARC** ..... Rodger KA1TKS 207 848 3846 A
5 June E Hartford **VintageR Museum** @1231 Main $12/Tg@7 $1@8 ..... John 860 675 9916 F
6 June **Corona** NYC @ HallofScience 47-01 111st ..... Steve WB2KDG 718 898 5599 A
6 June **Newington** CT NARL @HS $5@9 $20/T@8 $10/tg ..... John KA1HQK 860 666 8569 F+
12 June Goshen CT **SoBARC** @FG rt 63 nr4 ..... Lee K1LEE 860 435 0051 A
12 June Falmouth MA **FARA** ..... Ralph N1YHS 508 548 6405 A+
12,13 June Lancaster NH **MooseSwappers** @FG $10/S$5B@7 ..... Russ N1YZE 603 922 5514 F
13 June Bethpage NY **LIMARC** ..... Rich N2WJL 516 520 9311 A
20 June Flea at **MIT** ..... Nick 617 253 3776 F
10 July Union ME Pen-BayARC @FG $4/T@6 $5@8 $2tg ..... Will KD1ZS 207 785 2739 +
11 July Patchoque NY MidIARC ..... Mike N2OX 516 736 9126 A
18 July Flea at **MIT** ..... Nick 617 253 3776 F
24 July Nashua NH NE **Antique RC** $5@8 $1@9 @ Res Ctr Church 617 923 2665
7 Aug **Plattsburg NY CVARC** ..... Bernhard KC2ALG 518 643 9657 A
7 Aug St Albans ME @ **Snow Mobile Club** ..... Howard WA1SBI 207 876 3702 M+
15 Aug Flea at **MIT** ..... Nick 617 253 3776 F
22 Aug **Yonkers NY YARC** ..... John WB2AUL 914 969 6548 A
29 Aug Enfield CT **East V-UHF** Conf ..... map@map.com Mark K1MAP 413 566 2445
11 Sept **BallstonSpa** NY SCRACES fri6P $5+5/T+15cmp ..... Darlene N2XQG 518 587 2385
11 Sept Windsor ME **AARA** @Fairground $5@8 s@6:30 ..... Frank N1ITR 207 623 9217 +
12 Sept S Dartmouth MA SE **MassARA** @club $2@9 $10/S@7 ..... Bill K1IBR 508 996 2969 F
18 Sept Forestdale RI **RIFMRS** @VFW rt146 8A flea+auct ..... Rick K1KYI 401 725 7507
18 Sept E Hartford **VintageR Museum**@1231 Main $12/Tg@7 $1@8 ..... John 860 675 9916 F
18 Sep Marshfield MA **GenesisARS** @FG Rt3A $20FriPM$5@9 ..... Lou N1WNT 781 837 6651 +
18 Sept Lincoln ME **Bagley** ARC @BurrSch $3/S@7:30 ..... Sylvia N1JNR 207 732 5185 +
19 Sept Flea at **MIT** ..... Nick 617 253 3776 F
19 Sept Bethpage NY **LIMARC** ..... Rich N2WJL 516 520 9311 A
19 Sept Newtown CT **CandlewoodARA** ..... Jeff WB3DLG 203 798 6860 A
26 Sept Yonkers NY **Metro70** @LincolnHS $6@9 $25/T@7 ..... Otto WB2SLQ 914 969 1053 F
25,26 Sept Lancaster NH **MooseSwappers** @FG ..... Russ N1YZE 603 922 5514 F
3 Oct Queens NYC @ **HallofScience** 47-01 111st ..... Steve WB2KDG 718 898 5599 A
8,9 Oct Rochester NH **Hoss Traders** @FG x13 rt16 ..... Joe K1RQG 207 469 3492 T
10 Oct Wallingford CT **NUTMEG** CT Conv $6@9 $15/tg@6 ..... Gordon K1BIY 860 342 3258 F

Last Update 4-1-1999
de W1GSL

List is normally updated twice a month - look for the latest version
Source:
F= Flyer
T= tentative early info
+ = new info this month
A= ARRL
V= VE list
D= W1DL
W= web
M= W1JTH
WR NV 73 CQ QST = Mags

This list has been compiled from many sources. While we believe the info to be accurate the author can not be responsible for changes or errors. Check with the sponsoring organizations for more details. This list will be posted monthly to USENET. Mailed copies are sent when additions are made.
Additions/ Corrections via Internet w1gsl@mit.edu
US Mail
W1GSL
POB 397082
MIT Br
Cambridge MA 02139

Board Meeting Minutes continued from page 3

was appointed at the previous meeting (except for the very first meeting of course.) The chairman would be appointed from the pool of board members that did not live in the city the meeting was to be held. At the end of the 2nd year of the club, Cal, W1JFP, was appointed for one of the meetings. During that meeting he did such a great job that everybody thought that he should do it again. Until November 98 he continued this trend! Nobody thought, at the November 98 meeting, to appoint a chairman for today's meeting.

Dana nominated Jim as the chair. Jim accepted. Jim pointed out that the rotating chairmanship sounds like a good idea. He asked if there was anybody that was interested in taking the chairmanship for the May 1999 meeting. Jim thought that the person hosting it could do it these days. Don said that he'd do it. Tadd made a motion that Don be appointed chairman. Jim seconded. Vote passed.

Old Business

Treasury

Bob (QBQ) reported that the balance at the end of the calendar year 1998 was $2239.96. As of yesterday the balance was $2281.80 so we gained about $30 through 2 deposits. We're not going up very fast but not down very fast either.

Bob (QBQ) said he has the annual report by quarter.

Tadd moved that we accepted the treasurer's report. Jim seconded. Vote passed.

Dunning Letter

Bob (DWD) said that 1414 dunning letters have been created. Tadd reported we had Staples copy and folded the Dunning letter that he and Don had created. Then Tadd, Bob (DWD) and Nancy (KB2TNR) stuffed, stamped, sealed and mailed the dunning letters. Tadd said that there are still 140 or so that have not gone out as of the meeting but will go out during the following week. Some of the people that were dunned will also get the current report because in general we send out Reports to people whose memberships have recently expired.

Tadd said that we'd sent out a dunning letter to members from the database. He said that if any were returned undelivered by the post office that we'd look up the address in the callbook. If the callbook address is different from the database address we would mail the dunning letter out again.

Tadd had already handed receipts for postage to Bob (QBQ) the treasurer. Bob (DWD) said that he has receipts from staples. Don gave Bob (DWD) a check from RATS to cover a portion of the Dunning letter costs. Bob (QBQ) pointed that the right way to handle this is that

the treasurer should deposit the funds and then a check cut to reimburse Bob (DWD) for his expenses because all of these thing were voted as expenses. All agreed. Bob (QBQ) pointed that as a non profit organization that we could be audited.

Tadd pointed out that we should ask Leo-Paul to hold onto return-not-delivered dunning letters and hand deliver them to Bob (DWD) instead of mailing them to Bob (QBQ). Bob (QBQ) said that he'd already contacted Leo-Paul about it to make sure that he knew that Bob (DWD) would be talking to him.

Maps

Jim pointed out that the NEDA maps were the single most important thing that the club did. Tadd agreed vehemently. Don said that the latest report does have 2 maps. Tadd pointed out that the two maps were both non-standard in that one had obvious old data while the other wasn't to our normal format. John (MKH) said that he'd talked to N2UBH and that he and UBH would do graphics and that John and UBH would work together to do the maps if others would collect the data. Burt said that he spent huge amounts of time going out into the network. He said that since parts of the network were periodically not connected to each other that he had to do internet connections to various places in order to map. Tadd suggested that we did need to develop methods to obtain log files that were simpler. Burt and Tadd spent a couple of minutes reminiscing about network scanning to acquire data.

Tadd pointed out that TheNET nodes needed about 5 transactions per site to get the mapping data after getting to the first site.

<R><cr><wait for response> then
<C first port><wait for response>, then
<R><c 2nd port><wait for response>, then
<R><c 3rd port><wait for response>, then
<disconnect>.

FlexNet (and G8BPQ and some others) could be mapped in a single transaction after getting to the first site.

D<cr>L<cr><connect to next node><wait for response>

Burt pointed out that you had to know what kind of node you were connected to in order to know what kind of commands needed to be sent.

Don said that he agreed with Jim that the maps were the biggest thing that NEDA does. Jim said that with FlexNet the maps were even more important because until people know what callsigns are where, they'll need the maps just to know how to connect to a given area.

Bob (BJG) pointed out that he publishes a list @NEBBS that has the callsign -> location translation for all of the FlexNet nodes. He said that he publishes it every time it changes, several times a month.

Jim suggested that the node ops have got to do a better job of providing updates to the map committee. Don said we could probably do a better job of promoting it. Tadd said that he could print his map gathering form again and sarcastically mentioned that it worked well last time. Burt asked how many responses. Tadd said none.

NEDA compliant nodes

Tadd asked if the board wants to recommend that we accept non-TheNET style nodes as part of the "NEDA network." (right now MSYS, G8BPQ, NOS, NET/ROM and TheNET are all considered 'compliant' although in the past we've listed ROSE as well.

Silence.

Tadd pointed out that the Report had all sorts of recommendations for TheNET but never mentioned FlexNET recommendations. He asked if this should be changed. Tadd pointed out that ROSE were never made because ROSE software didn't provide researchable links except where the sysop expressly maintained it that way which was not usually done.

Dana asked for a restatement. Bob (BJG) asked what we're going to put in the Report for FlexNet.

Tadd said that he wants the board to allow the web editor, mapmaker, and Report editor to include details about FlexNet. Don pointed out that we could make a statement that FlexNet could be considered "NEDA compliant." Don said that documentation for the Report needs to be developed. Burt said that "NEDA compliance" is a philosophy of openness. Don said he'd like to form a committee to decide whether FlexNet was NEDA compliant or not and to make a recommendation which the board could vote upon at the next meeting. Bob (BJG) asked what it has to do to be compliant. Jim mentioned that the big issue is going to be how usable it is to current network users including TCP/IP. Burt pointed out that it has to be researchable by a remote user, open to all users. Bob (BJG) said that they are testing. Jim said that we have users of the network and before we jump on the FlexNet bandwagon we need to know if it will support those users. Don says that the question isn't whether it will work or not. "Yes, it will work." The question is How. He said that somebody is going to have to explain how it will work. Tadd said that part of the committee's report is going to be explaining what the ramifications are for our networking partners, i.e. what changes do they have to make in their operations and where do they go to find instructions. Don and Bob (BJG) volunteered to be on the committee. Tadd pointed out that the TCPers and the BBS ops had to make changes to use TheNET. What we want to do now is that instead of just saying no change will need to be made, we want to tell them what changes they must make and how. So that's the charter of the committee. Bob said that there is not an issue about whether TCP/IP will work over FlexNet. What we need is a list of what TCP/IP software is compatable. Don made the motion, Dana seconded. Passed.

Burt was explaining on the side that no user can dominate the network.

Jim clarified that we may need to specify what particular variants of some applications will work on the network. Burt says that the committee should generate a document that provides the conditions for compliance that we can publish in our magazine and on the web page. Don says the two issues will be, "What is the definition of NEDA compliance?" and "How must we apply FlexNet to assure that?"

Bob (BJG) said there have been exchanges between Gunter (FlexNet author) and Barry, K2MF, MFNOS author. He said that the NETCPA members have that because it was copied to the distribution list. Bob (BJG) said that the author of FlexNet described all sorts of details about the inside of the code. He'd send it to any interested party.

Continued on next page

Minutes contined from previous page

Editors Report

Tadd said that the Report is ready to go out with a few minor corrections. He said that the announcement for the next board meeting was not complete and that there were a few spelling errors.

Jim asked if we're going to combine the ready Report with today's meeting. Tadd said that he'd rather put out another shortly to cover today's meeting. Tadd said that his data gathering for the current issue was wildly successful and he had some more data to go into the next issue. Don said he also had an RMNC3 document translation to go into the next one. Bob (BJG) remarked on how some news that was as recent as yesterday was already in the Report. Tadd said he mail out 95 issues of it and will take care of getting it printed. He said that he'd do a small number of them in hopes of having another issue shortly to fulfill any new members we get. Don asked if we archived it on PDF. Tadd said that the report is printed from the PDF after it is archived.

Tadd wonders if there is any reason not to name the NEDA magazine "The Quarterly" again. He wants to make it official that the maps, technical articles, and administrative stuff would be in one issue since that is what we've been doing anyway. Don asks if Tadd means to undo what was done 4 years before. Tadd said that the original purpose for unbundling the Quarterly into the Report, Journal and Maps was to ease the burden on a specific editor. In the end we only had one editor anyway and the NEDA Journal was published only once, shortly after the unbundling occured, while the Maps were only published as a standalone document once.

Somebody asked about the Annual. Tadd said that if they get the FlexNet docs entirely translated that it might be worth doing another Annual to get it all in one place. Dana said something about striking the need for the Annual from the Constitution.

Bob (QBQ) queried that Tadd couldn't get the Report out on time and that now he wants to add to the burden by adding in map and technical articles. Jim said that we were having trouble getting out the Report, even without including more stuff. Tadd said that we already include the extra stuff. Tadd said we were doing this only in name and not in reality. We're already including vast amounts of technical details and he'd like to include maps. The club already emphasized earlier in the day about how important the maps were. All Tadd wants to do is make it under one target because he was the only one doing it. He asked if there was any hope of finding a volunteer to do a piece of it. Jim said he had no problem with it if Tadd was willing to do it. John wondered how this would impact our finances. Tadd said not at all because we're already doing a single magazine. Tadd said that he just wanted to change the magazine in name since it's already a Quarterly in fact. Burt said that we could do just like we were going to do last year, i.e. continue until we ran out of money and then close up shop. Tadd said that right now that looks to be more than a year away. Tadd indicated such because if we were to get membership up the per-unit quantity goes down even though the cost goes up with membership.

Don says that Tadd just wants to call it the Quarterly and asked if anybody is opposed. Nobody is opposed. Jim said fine, it's the NEDA Quarterly.

Web Page

Burt says that we have 17000 hits on the web page. He said that 2 people have downloaded and used the membership application to join the club. Burt says that we're not over space so there is no problem with adding stuff. He says that a few people have downloaded the X1J things. He said that if he had copies of stuff that was published that he'd add it to the web page. Tadd asked if it would be ok to add links to member web pages. Burt said that he had a few links to other clubs. Burt said that he'd add some more topics to the web page. He said that he wasn't in the mood to generate new articles but that he'd put in a comment to the fact that the club was into FlexNet now. Somebody asked about N5PVL's page. Burt said that PVL launched on Burt about removing the NO LLLids link. Jim asks if we have that ironed out. He asked if everybody agreed that NEDA would put a link to Tadd's web page and links to the several FlexNet sites. All agreed. Burt said that if there were any other links he'd like if we let him know.

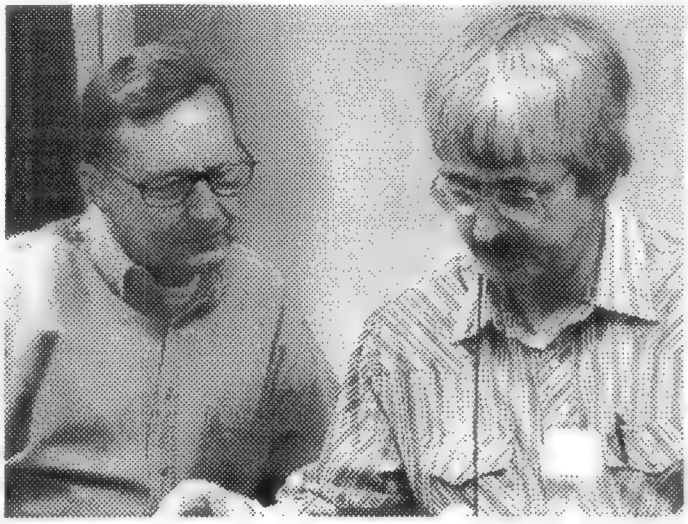
New Business

Budget

Jim brought up the budget. Bob (QBQ) pointed out that he'd sent one to Tadd as asked. Tadd said he didn't know where it was. Bob produced another copy. Bob said that he thought that Tadd would reproduce it and add it to his agenda, to be handed out at the meeting (like Cal did!). (*ed: Don't send Tadd printed material haha*)

Jim read the budget

Income for the year is expected to be dues of $1000, interest $18, total $1018. Expenses are based on printing several Reports out at about $1500 plus $100 for the web site, $200 for printing and mailing ballots. We're expecting about $1000 for mailing expenses. Jim said the estimate is a total of $2800 for expenses. Tadd asks if Bob's (QBQ) proposed budget has us hitting $0 this year. Bob (QBQ) said that no, considering that we have a balance carried in plus expected dues which will cover those expenses. Tadd said that we should lose a little money this year. Somebody else said we'd lose MOST of it. Dana moved that we accept the planned budget and review and adjust at the next meeting. Tadd seconded. Bob said that at the end of March he'd bring the known expenditures up to date and then we'd have a good estimate. Jim called the vote. Passed.



Meeting Date

Bob (BJG) and Don had previously discussed co-hosting the meeting and that Bob (BJG) would look for a site. Don said that if Bob (BJG) couldn't find a site, that he had a back-up conference room. Bob (BJG) said that he'd think the Legion Hall would do. Bob (BJG) and Burt discussed potential dates. Tadd noted that the previous years that the beginning of May usually was best to avoid the bigger hamfests, mother's day, and radio contests. Tadd proposed Sunday May 2nd. Jim agreed, May 2nd in New Jersey. Jim asked for agreement. Don said that the site would probably be Oakland or Montvale.

Treasurer position.

Bob (QBQ) said that he was looking to get out of the Treasurer's position after the end of the Quarter. Tadd recommended Herb, DSW. He said he'd call Herb.

Alternates

Dana said he'd like to appoint Don Rotolo N2IRZ. Passed. Bob (QBQ) appointed Bob Seastream, WB2DWD, as his alternate. Passed

NEDA Advertisement

Don read a statement that he'd like to release on a couple of packet related Internet mailing lists. The board recommended that the message point to the web site's membership application. Dana moved that we give Don permission to release the document as it was. Jim seconded it. All approved.

Jim asks if there are any other issues. No issues

Adjournment

Gee. We'll make it to the ball game. (Superbowl today) All agreed that we didn't care about the game, just the commercials haha. Jim made a motion to dismiss the meeting. Dana seconded. All clapped.

Tadd suggested that we stop recording. Bob (DWD) suggested that if they can do out-takes on Seinfeld that we can do it here.

—Transcribed by Tadd, KA2DEW

Welcome to Chaos central. This is the KA2DEW computer lab / ham radio station, and general place to put things to get them away from the toddler. I'm sitting here right now, typing this as I wind up the newsletter. Actually the minutes didn't quite fill this page so I was looking for something to fill it all up. Will this work?

Membership Roster

This is the NEDA membership roster as of 4/05/99 for all members expiring after 03/99. Please check your listing and renew if necessary. Thanks.

callsign	first name	last name	city	st	zip	exp	home BBS	internet e-mail address
NU1A	Frank	Finger	Sutton Mills	NH	199905	A	call@bbs	frankdinger@hotmail.com
AA2AC	Vernon	Siegel	Clarence	NY	200002	V	AA2AC.#WNY.NY.USA.NA	aa2ac@srscales.com
VE1AIC	Ron	MacKay	Cornwall	PE	200002	A	VE1AIC.PE.CAN.NOAM	ve1aic@canada.com
KA2AON	Brien	Mathews	Hannibal	NY	199905	A	N2UBH.#CNY.NY.USA.NA	b.mathews@worldnet.att.net
KA1APA	Joe	Lelievre	Sanford	ME	200002	V	WA1WOK.ME.USA.NA	joegbra@gwi.net
AA9AW	Walter	Altus	Onalaska	WI	199911	A	AA9AW.EN43KM.WI.USA.NA	WWALTUS@centuryinter.net
K2BEH	James	Wenskus	Rochester	NY	200002	A	WB2WXQ.#WNY.NY.USA.NA	allerlei@alum.mit.edu
K2BJG	Robert	Anderson	Oakland	NJ	200002	A	wa2sna.nj.usa.noam	rra@intac.com
VE2BMQ	Burton	Lang	Howick	PQ	999999	V	VE2FKB.#MTL.PQ.CAN.NA	
KC1BT	Allan R.	Machell	Barre	VT	200002	A	KA2TCQ	machell@weblizard.net
K1BXG	Joe	Devlin	Chester	VT	199904	V	WA1ZYX.NH.USA.NA	jdvln@sover.net
N2CG	Marty	Grozinski	Flemington	NJ	199910	A	N2QAE.#NNJ.NJ.NOAM	MJGROZI@postoffice.ptd.net
NB2CIK	John	Papson	Melville	NY	200001	V	WA2PNU.#NLI.NY.USA.NA	papson@hazeltine.com
K3CKO	Robert	Swarm	Corry	PA	199912	A	KB2OBB.#WNY.NY.USA.NOAM	
NB2COP	Edward	Kracum	Middletown	NJ	199912	V	WB2COP.NJ.USA.NA	ekracum@monmouth.com
KB2CS	Jack	Abel	Albany	NY	999999	C	KB2CS	
K1CSB	Ray	Feeley	Southhampton	MA	199912	V	K1MEA.#WMA.MA.USA.NA	k1csb@yahoo.com
NB3CUF	Wells	Farr	Cntrl Bridge	NY	200002	V	N2NQH-4	welliz@telenet.net
N2CWY	John	Taylor	Port Jervis	NY	200001	V	N2CWY@N2CWY.AMPR.ORG	JFTAYLOR@CERFNCT.COM
WA8DCE	James	Turrin	Stow	OH	200002	A	WA8DCE.#NEOH.OH.USA.NOAM	jturrin@neo.lrun.com
N1DCO	Donald	Clark	W Newbury	VT	200006	V	W1ET.NH.USA.NA	donald.clark@connriver.net
N9DDD	John	Koster	Richardson	TX	999999	C		
KA2DEW	Tadd	Torborg	Amherst	NH	999999	V	ka2dew@wb1dsw	ka2dew@torborg.com
AA0DH	Donald	Waring	Imperial	MO	200001	V		
VE2DJE	Richard	Aubin	Laval	PQ	199906	A	VE2TOY.PQ.CAN.NA	VE2DJE@amsat.org
K4DMU	Joseph	Leitsch	Lousiville	KY	200102	A	W4CN.KY.USA.NA	joe@iglou.com
K2DN	Fred	Skinner	Cortland	NY	200002	A	KB2FAF.#WNY.NY.USA.NA	K2DN@A-ZNET.COM
VA2DOSLaval	Laurentide	Radio Club	Fabreville	QC	199911	A	VE2CRL.#MTL.QC.NOAM	VE2CRL@VIDEOTRON.CA
NB1DSW	Herb	Salls	E Kingston	NH	999999	V	WB1DSW.NH.USA.NA	
NB3DTG	Bob	Unger	Nazareth	PA	200001	V	WB3DTG@WB3DTG	WB3DTG@JUNO.COM
NB2DWD	Robert	Seastream	Manchester	NH	199905	A	WA1WOK.NH.USA.NA	seastream@mediaone.net
N7ENT	Peter	Kallio	Port Orchard	WA	200002	A	N7ENT.#WWA.WA.USA.NOAM	n7ent@arrl.net
KC3ET	Charles	Gessner	West Mifflin	PA	200002	A	KC3ET.#SWPA.PA.USA.NA	kc3et@nb.net
N3ETP	Robert	McGrath	Salisbury	MD	199902	A	N3KNT.DE.USA.NA	
KY2F	Fred	Swiatlowski	Oswego	NY	199903	A		
NB2FAW	Nicholas	Dudish	Herkimer	NY	200002	A	WA2TVE.NY	nickdudish@juno.com
KA2FIQ	Jim	Morgan	Ossining	NY	200001	A	WA2AWG.#ENY.NY.USA.NA	
NA2FNQ	Jerry	Mehrab	Northport	NY	199903	V	WA2FNQ.#NLI.NY.USA.NOAM	WA2FNQ@mail.idt.net
N9FQF	Gerald T.	Kelley	Jeffersonville	IN	199911	A		N9FQF@juno.com
N7FSP	Scott	Cronk	Seattle	WA	199905	A	N7FSP.#SEA.#WWA.WA.USA.NA	n7fsp@n7fps.ampr.org
N1FVQ	Aime A.	Beaudry	Manchester	NH	200001	A	WA1WOK.NH.USA.NOAM	aabeaudry@juno.com
N1FYR	Alan	Merrill	Gilsum	NH	999999	V	W1FYR.NH.USA.NA	
K1GQH	Roger	Guillemette	Manchester	NH	199904	A	WA1WOK.NH.USA.NA	K1GQH@juno.com
N1GUJ	Peter	Ferguson	Granby	MA	200003	A	K1MEA.#WMA.MA.USA.NA	peter.ferguson@the-spa.com
NA4GWG	Bob	Ewing	Lincroft	NJ	200002	V	WB2COP.NJ.USA.NA	rewing@monmouth.com
KC1HH	Robert	Merril	Goffstown	NH	200006	V	WA1WOK.NH.USA.NA	bmerrioo@xtdl.com
KD1HL	Maurice	Richesson	Northboro	MA	200002	A	WA1PHY.#EMA.MA.USA.NA	riches@world.std.com
N1HO	Bayard	Coolidge	Epsom	NH	200102	A		n1ho@aol.com
N1HSM	Stan	Graziano	Atkinson	NH	200001	A	WB1DSW.NH.USA.NA	
AD1I	William	Kenefick	Chelsea	VT	200002	A	W1ET.NH.USA.NOAM	MDKenefick@aol.com
N2IH	Isaac	Hathaway Jr.	Ithaca	NY	199903	V	WA2TVE.NY.USA.NA	w2IH.IKE@worldnet.att.net
N1IMO	Bernard	Peabody	Hollis	NH	200002	A	N1FT.NH.USA.NA	N1IMO@qsl.net
N1IN	William	Sexton	Richmond	MA	200001	V		w1sexton@taconic.net
N2IRZ	Don	Rotolo	River Vale	NJ	200101	V	WA2SNA.#NNJ.NJ.USA.NOAM	n2irz@compuserve.com
N1IUP	Harold	Read	Berlin	MA	200102	V		read@read.org
ND5IVD	Greg	Jones	Denton	TX	999999	C		
WB3IWY	Gerald	Engman	Warren	PA	200001	A	KB2OBB.#WNY.NY.USA.NA	WB3IWY@PENN.COM
K2IZA	Jack	Aber	Canisteo	NY	200002	A	WB2WXQ.#WNY.NY.USA.NA	jaber91628@infoblud.net
NV2J	Anthony	Volino	Elmira	NY	200001	A		
N2JBA	Edward	Rubin	Amenia	NY	200002	A	WA2PVV.NY.USA.NA	n2jba@juno.com
N3JBG	John	Filiatrault	Russell	PA	200002	A	KB2OBB.#WNY.NY.USA.NA	n3jbg@penn.com
N1JEO	Joel	Curneal	Meriden	CT	200004	V	N1JEO.CT.USA.NA	75566.1711@compuserve.com
N1JFP	Calvin	Stiles	Hanover	NH	999999	V	W1JFP.NH.USA.NA	cals@sover.net
KA2JFU	Richard	Billings	Oriskany Falls	NY	199905	A	WA2TVE.NY.USA.NOAM	amateur5@juno.com
N3JNS	Dan	Sekera	Kingston	PA	199904	A	K3RLI.#EPA.PA.USA.NA	
N2JPQ	Rick	DuBrava	Marathon	NY	199903	A	N2JPQ.#WNY.NY.USA.NOAM	rdurbava@spectra.net
KA2JXI	Roger	Ousterhout	Ogdensburg	NY	200002	V	KA2JXI.#NNY.NY.USA.NA	ka2jxi@k2cc.sos.clarkson.edu
38KBB	Dave	Roberts	Ipswich		999999	C		
N2KGY	Cadet Amateur	Radio Club	West Point	NY	999999	A		
W6KK	Charles	Spetnagel	Alta Loma	CA	200002	A	W6TJ	w6kk@ix.netcom.com
N8KVK	Ted	Jacobson	Athens	OH	199912	A		aa270@seorf.ohiou.edu
N7KXI	Jim	Raehl	Orem	UT	199912	A	N7KXI.UT.USA.NA	jraehl@wicat.com
KB2KZB	Floyd	Harding	Liverpool	NY	200002	V	KB2DIO.NY	zilsam@juno.com
W6KZB	Mike	Burton	Temecula	CA	200001	V	KJ6VC.#SOCA.CA.USA.NA	mike_burton@forest.fire.ca.gov
WZ1L	William G	Poulin	Amesbury	MA	199910	V	WZ1L.FN42MU.MA.USA.NA	ema106@tiac.net
N2LEX	John	Wright	Albany	NY	200002	A	WA2UMX.#ENY.NY.USA.NA	jakdblu@aol.com
N2LGF	Reuben	Merchant	Henderson	NV	200101	A	WI7D.#SONEV.NV.USA.NA	W2LGF@JUNO.COM
KB2LML	Alvah	Haggett	Champlain	NY	200102	A	KD2AJ.#NNY.NY.USA.NA	haggetta@northnet.org
WA3LWR	Robert	Chimel	Clarks Summit	PA	199903	A	KB3BHH.#EPA.PA.USA.NOAM	WA3LWR@ncx.com
N1MBG	John	Keslo	Pelham	NH	199905	A		f.j.keslo@ieee.org
K1MEA	James	Wzorek Jr	Easthampton	MA	199912	V	K1MEA.#FN32PG.MA.USA.NA	jfw@crocker.com
N2MKH	John	Driscoll	Syracuse	NY	200001	V	N2UBH.#CNY.NY.USA.NA	jdinsyr@dreamscape.com

callsign	first name	last name	city	st	zip	exp	home BBS	Internet e-mail address
N1MR	Mark	Robinson	MILTONBORO	VT	199912	A	KD2AJ.#ENY.NY.USA.NOAM	
WY2N	James	Brewer	West Winfield	NY	200002	A	WA2TVE.NY.USA.NA	lion@borg.com
N0NDO	John	Painter	Everett	WA	999999	V	N0NDO.#SEA.WA.USA.NA	
W1NMQ	Joseph	Boudreau Jr	Fiskdale	MA	199904	V	KB1H.CT.USA.NA	
N2NSA	John	Romano	Bronx	NY	200003	A	KB2VLX.#BRONX.NY.USA.NA	n2nsa@maestro.com
W7NTF	Gary	Kohtala	Spanaway	WA	200102	A	w7ntf.#wwa.wa.usa.noam	w7ntf@aol.com
WJ2O	Dave	Farnsworth	McConnellsville	NY	200002	V	WB2BIN.NY.USA.NA	wj2o@aol.com
KD3OA	John	Tobias	Mt Pleasant Mill	PA	200002	V	kd3oa.#sny.pa.usa.noam	kd3oa@ptd.net
N2OCW	Lawrence	Ashton	Berkley Springs	WV	199904	V	N2OCW.WV.USA.NOAM	n2ocw@intrepid.net
W1OQ	Hartley	Gardner	Phoenix	AZ	200002	A	N7MRP.AZ.USA.NA	hartley@goodnet.com
N5PBC	Hans	Zorn	Spring	TX	199910	A	WA4IMZ.#SETX.TX.USA.NA	hezorn@neosoft.com
K0PFX	Mel	Whitten	Bridgeton	MO	200002	A	k0pfx.#stl.mo.usa.noam	mel@mo.net
K7PO	Donald	Sturtevant	Billings	MT	200002	A		
N2POR	Karl	Hemker Jr.	Albany	NY	199907	V	WA2UMX.#ENY.NY.USA.NA	n2por@qsl.net
WA1PTC	Michael	Staines	Rochester	NH	199912	V	WA1WOK.NH.USA.NOAM	mike@nh.ultranet.com
N1PVJ	Harry J	Coon	Plymouth	CT	199906	A		
KE2PW	Rusty	Seastrum	Bemus Point	NY	200002	A	KA3SFC.#NWPA.PA.USA.NA	
KA9Q	Phil	Karn	San Diego	CA	999999	C		
N2QAE	Arthur	Martin	Long Valley	NJ	199905	V	N2QAE.#NNJ.NJ.USA.NA	
WA3QAG	Sanford	Reedy	Canton	PA	200002	A	KB3QW.#EPA.PA.USA.NA	sireedy@epix.net
WB2QBQ	Robert	Seger	Altamont	NY	199904	V	WB2QBQ.#ENY.NY.USA.NA	wb2qbq@juno.com
WB2QJA	Richard L.	Benda	White Plains	NY	200002	V	WB2QJA.#ENY.NY.USA.NA	RCPKVbenda@aol.com
W1QJH	Gerard L	LeBoeuf	Hudson	NH	199903	A		gleboeuf-w1qjh@juno.com
W2QLI	James	Dates	Corning	NY	199908	A	WB2QBQ.#ENY.NY.USA.NA	
KA1QP	Paul	Chauvin	Manchester	NH	200001	A	WA1WOK.NH.USA.NA	lpchvn@juno.com
K2QQY	John	Darling	Oswego	NY	199905	A		jd2ham@aol.com
KB3QV	William	Watts	Hudson	FL	199905	A	N3KNT.DE.USA.NA	
W1RFP	Blanchard	Pratt	Norwich	VT	200002	A	W1ET.NH.USA.NA	bpratt.8245@aol.com
W2RH	Richard	Black	Brockport	NY	199904	A	WB2WXQ.#WNY.NY.USA.NA	rhb@vectorbd.com
W1RK	Ralph	Karcher	Gloucester	MA	200002	A	BBSUGM	rkarcher@ppg-i.com
VE2RM			PtClairDorvl	PQ	200003	A	VE2FKB.PQ.CAN.NA	burt@rocler.qc.ca
KB2RQB	David R.	Allen	Dexter	NY	200102	A	KA1JXI.NY.USA.NOAM	
K1RSC	John	Johnston	Rye	NH	200001	A	WB1DSW.NH.USA.NA	
WB2RUM	Richard	Schisler	Rutland	VT	200002	A	WB2RUM.VT.USA.NA	rschisler@safari.com
K2RW	Richard	Wujciak	Rockaway	NJ	200002	A	K2RW.#NNJ.NJ.USA.NA	k2rw@aol.com
K2SBQ	Dexter	Berwald	Owego	NY	199905	A	WF2A.NY.USA.NA	
W2SN	Edward P.	Madison	Brooklyn	NY	200002	A	WA2ZWP.#SI.NY.USA.NOAM	maded@ix.netcom.com
N2SNL	Jack	Tripp	Pittsford	NY	199902	A	WB2WXQ.#WNY.NY.USA.NA	jat@frontiernet.net
WA2SOK	Irv	Walter	Palmyra	NY	200002	A	WA2WXQ.NY.USA.NA	wa2sok@redsuspenders.com
KD1SQ	Lee	Reynolds	Lempster	NH	200002	A	WA1ZYX	lreynolds@cyberportal.net
KD6STL	Hugh	Jamison	Herlong	CA	200002	A		
W3SYY	Richard	Bender	Edensburg	PA	200002	A	W3SYY.#WPA.PA.USA.NA	rick+@pitt.edu
N2TKX	Stephen	Auyer	Liverpool	NY	200002	A	KB2DIO.#CNY.NY.USA.NOAM	n2tkx@arrl.net
KB2TNR	Nancy	Torborg	Amherst	NH	200002	V	wb1dsw.nh	nancy@torborg.com
W2TTM	Edward J	O'Connor	Morgan	NJ	200002	A	wb2cop	ttm@worldnet.att.net
KA1TUZ	Richard	Doherty	Newton Center	MA	200002	V	KA1TUZ.FN42JH.MA.USA.NA	ka1tuz@gis.net
WA2UKX	William	Reiter	Pen Yan	NY	200002	A	kb2bxp	wreiter@spacetech.com
KB2UQZ	Edward A.	Gutowski	Corfu	NY	199905	A	KE2VW#WNY.NY.USA.NOAM	kb2uqz@juno.com
W1UU	Peter	Butler	N Andover	MA	200002	V	W1UU.#EMA.MA.USA.NA	w1uu@gw.w1uu.ampr.org
K2UZV	Merrill E.	Ryder	Quoque	NY	200002	A	N4GAA	merleryder@juno.com
NY2V	Fredrick V	Adsit	Syracuse	NY	200002	A	n2ubh.#cny.ny.us.na	ny2v_fred@juno.com
N1VE	Mike	Stone	Gilford	NH	200002	A	n1ve@wa1wok	n1ve@amsat.org
N6VR	Ray	Benny	Oak View	CA	199906	A		jbenny@rain.org
WB2VUN	R George	Newton	Skaneateles	NY	200002	A	WA2TVE.NY.USA.NA	rgnewton@aol.com
N1WCU	Marc	Chauvin	North Conway	NH	199903	A		chauvin@chauvinguides.com
K2WG	Wayne	Gearing	East Chatham	NY	200002	A	WA2UMX	wayneg@taconic.net
WA2WNI	Dana	Jonas	Valatie	NY	200001	V	WA2WNI.#ENY.NY.USA.NA	wa2wni@qsl.net
N8WQG	LeRoy	Anderson	Crystal Falls	MI	200002	A	KC8VC.#UP.MI.USA.NOAM	n8wqg@up.net
NH6XO	Robert	Hlivak	Kaneohe	HI	200102	A		hlivak@net.its.hawaii.edu
KB1YL	James	Robertson	Rumford	ME	200002	V	W1TLC.ME.USA.NA	KB1YL@megalink.net
K1YPP	Dennis	Blanchard	Hampstead	NH	200002	A	WB1DSW.NH.USA.NA	jadepro@jadeprod.com
N2ZHS	Al	McChesney	Scotia	NY	200002	A	WA2UMX.#ENY.NY.USA.NA	J38AL@aol.com

I plotted a graph of the membership numbers as of April 2, 1999. This is the number of members we have in the database for each given expiration date. In other words, if we count "real members" as being people who expired after April 1, 1999, we have 131 "real members", as of April 2, 1999.

9809=159	*9903=138*	*9909=115*	*0003=25*	*0009=22*
9810=155	*9904=131*	*9910=115*	*0004=24*	*0010=22*
9811=155	*9905=120*	*9911=115*	*0005=24*	*0011=22*
9812=152	*9906=117*	*9912=115*	*0006=22*	*0012=22*
9901=147	*9907=116*	*0001=84*	*0007=22*	*0101=19*
9902=145	*9908=115*	*0002=28*	*0008=22*	*0102=12*

The twelve members listed for 0102 (Feb, 2001) and forward were all life members with expiration dates of 999999.

Bob, WB2DWD, is NEDA's membership director. Contact Bob via the PO Box, or e-mail at seastream@mediaone.net or ICQ# 5769071 or via packet at wb2dwd@wa1wok.nh

North East Digital Association Membership Application

Welcome to NEDA Packet Radio This is the official membership form for NEDA.

Some general information about NEDA:

NEDA is a club formed in 1989 to promote packet radio and to lead the development of a general purpose, user-accessible wide area packet network.

NEDA's primary area of interest includes the north eastern United States, Quebec, Ontario and the Maritime Provinces of Canada.

NEDA publishes documents each year including official meeting minutes and articles of interest to packet networking. Voting and Associate members receive all NEDA publications.

NEDA's administration is based upon six directors, alternates, and several appointees. The six directors of the Board are elected for two year terms by Voting members, three are elected each year. The Board meets three or four times a year in various locations within the club's area of interest. Meetings are open to the voting membership.

NEDA members sponsor general interest and special interest packet meetings throughout the region. NEDA's focus is to publish information on packet radio and packet radio networking. NEDA does NOT fund the building, operation nor maintenance of any packet networking facility.

The membership/dues structure of NEDA is:

Associate with US address	$15
Voting with US address	$25
Canadian Address surcharge	$5
Non-US/Non-Canadian address surcharge	$15
Upgrade to Voting, all countries	$10

All membership rates are US funds only. Foreign members should send funds in a Postal or Bank Money Order in US funds. Thank you.

This form is dated 19970707

Name:

Address:

City: **State or Province:**

Postal Code:

Country: If not USA

County:

Full service BBS at which you get your packet mail.
Example: WB2XYZ@WA2WNI.#ENY.NY.NOAM

Call **@** **BBS**

Home Phone: ( )

Office Phone: ( )

If a NEDA member gave you this form, what is their callsign?

e-mail address:

Membership desired - Check one

Voting	*Associate*
USA - $25/yr ☐	USA - $15/yr ☐
Canada - $30/yr ☐	Canada - $20/yr ☐
Foreign - $40/yr ☐	Foreign - $30/yr ☐

Renewal ☐ Upgrade to Voting Membership, $10/yr ☐ Information Update only ☐

Membership Dues are payable in US Funds

Make Checks payable to NEDA

Address this form and all correspondence to:

NEDA
PO Box 563
Manchester NH 03105

NEDA Representative	Office Manager	Membership Chairman
Date:	Date:	Database:
Amount:	Amount:	
Check #:	Check #:	Intro Package Mailed:
Intro package Delivered: ☐		

NEDA TheNET X1J Node Spec

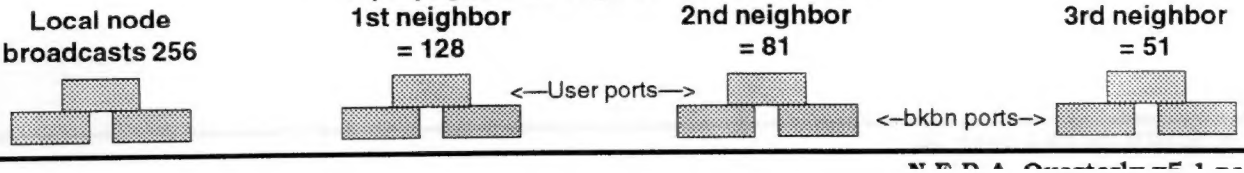
Parameter and Mode Specifications for a NEDA Compliant Node
Revised: Aug 95

X-1J PARMS		user	#DPPL	#HTSF	Gate	non
#	Function	port		m'way	way	ideal
1	Size of destination node table (A)	100	100	100	100	100
2	Minimum auto update quality	50	63 (B)	63 (B)	50	50
3	HDLC (radio port) default quality	0	0 (C)	0 (C)	(D)	0
4	RS-232 (Crosslink) default quality	203	203	203	203	203
5	Initial obsolescence count	5	5	5	5	5
6	Min Obs to broadcast	6	3	2	6	3
7	Nodes broadcast interval	900	900	900	900	900
8	Initial time-to-live	13	13	13	30	13
9	Transport FRACK timeout (seconds)	200	200	200	600	200
10	Transport RETRY counter	1	1	1	1	1
11	Transport acknowledgement delay	1	1	1	1	1
12	Transport busy delay	180	180	180	180	180
*13	Transport window size	2	2	2	2	2
*14	Transport overfill limit (frames)	4	4	4	4	4
15	No-Activity time-out (seconds)	7200	7200	7200	7200	7200
16	Persistence (n/256)	64	255	(E)	(E)	(E)
17	Slottime	20	1	20	20	20
18	FRACK (T1) time	4	1	1	(F)	9
*19	AX.25 windowsize (MAXFRAME)	1 (G)	1	1	1	1 (G)
20	AX.25 retries	10	10	10	10	10
*21	ACK (T2) time (L2 RESPTIME)	50	20	20	50	50
22	Active check (T3)	32000	32000	32000	32000	32000
23	Digipeat	0	0	0	0	0
24	Callsign validation	1	1	1	0	1
25	Beacon mode control	2	0	0	1	1
26	CQ broadcasts	1	0	0	0	1

MODES						
#	Function					
1	RS-232 host mode	0	0	0	0	0
2	CWID repeat period (seconds)	0	0	0	0	0
3	CWID keyer speed (J)	6	6	6	6	6
4	Selective nodes broadcast on ports	2	3	3	3	2
5	RS-232 crosslink protocol	0	0	0	0	0
6	Transmit keyup delay (TXD)	35	(H)	(H)	(H)	35
7	Full duplex (set as req'd)	0/1	0/1	0/1	0/1	0/1
8	Crosslink node b'cast interval (I)	400	410	425	440	450
9	Node b'cast algorithm port ctrl	3	3	3	3	3
10	Beacon period (seconds)	600	600	600	600	600
11	Connect redirector (J)	0	0	0	0	0
12	User message control flags (J)	27	19	19	19	19
13	Hash (#) node b'cast port control	3	3	3	3	3
14	Extra alias	1	0	0	0	0
15	Auto reconnect to node	1	0	0	0	0
16	Control of slime trails.	2	2	2	0	2
17	Digipeat up/downlink control	3	3	3	3	0

* These parameters are good candidates for further experimental research.
(A), (B), (C)... etc indicate notes following page.

This drawing represents the node quality value for a single node as it propagates through several node hops.



Notes Regarding TheNET Parameter Spec

(see previous page)

User port:

Visible node port where live keyboard stations access the network and access resources over the network. No station is heard on-channel by the user port that transmits >3K/hour or 300K/month. No node to node communications on HDLC Pside. No node broadcasts on HDLC side. All node broadcasts on HDLC side ignored.

Non-ideal User port:

Visible node port where we don't want to do node to node communications but where there are other nodes or servers that this node can hear, on frequency, that are causing HTS effects. This might be a 2m user port that has gone to seed and sprouted automated stations that transmit more than 3K/hour: such as BBSs, NOS, KAnodes, Digipeaters, HF gateways, APRS stations, DXClusters, weather nodes, TheNET nodes, switches, etc. This port doesn't broadcast nodes on HDLC or accept broadcasts.

Gateway:

Visible non-2 meter node port that acts as a hopping point between networks. Accepts node broadcasts from both HDLC and RS-232 ports but only broadcasts itself. The purpose of this is to allow two networks that have conflicting parameters to meet, allowing users and services to cross over, but without having the node lists intermingle. We're never going to get a gateway defined exactly because they will be customized for the various circumstances every time but this is the general idea.

#HTSF HTS Free multiway:

Hidden non-2 meter node (#node) for a protected HTS free backbone. All stations on frequency follow NEDA parameters and all agree to not have more participants on frequency without further agreement. All HDLC routes are locked in. The default HDLC quality is set to 0. Persistence is set to 256/(N-1) where N is # of transmitters. ACL is used to selectively enable participating neighbor nodes. Default ACL=7.

#DPPL Dedicated Point to Point Link:

Hidden non 2 meter node (#node) for a protected HTS free backbone with only two radios on channel within range of either site. Both stations follow NEDA parameters. The HDLC neighbor station is locked in with ROUTE command at both sites. Default HDLC=0 ACL is used to selectively enable participating neighbors. Default ACL=7.

NOTES

'/ These NEDA recommended TheNET X1J parameters are designed to suit and standardize MOST of our network node needs. However they are just recommendations (not cast in stone) and can be adjusted to meet the needs of SPECIAL circumstances. Don't make the mistake of someone recently who thought that we were against full-duplex links because we previously specified Mode 7=0 (full duplex off). If you choose to adjust these recommended parameters however, PLEASE make sure you know ALL the effects of the change. If you are not fully aware of the node operation, ASK BEFORE MODIFYING.

A/ It has been observed that this number is the total number of ROUTES (up to three routes per node) for all the nodes entered in the nodes table instead of just the number of nodes entered. If your node contains a large number of "real" alternate routes for many nodes, it may be necessary to increase Parm #1 to 150 or higher to prevent nodes being lost from the nodes table. The use of the alternate broadcast algorithm should prevent the proliferation of most of the "trivial" routes.

B/ The minimum auto update quality on hidden nodes should be set to 63 since anything lower will not show at the nearest visible node anyway and fills valuable buffer space in the node.

C/ The HDLC default quality on hidden nodes should be set to 0 to prevent unwanted or intermittently received nodes from corrupting the network. However Parm #3=0 makes it difficult to get to the node following initial installation or cold reset. If you burn parm #3=63 into the EPROM, you will be able to connect and sysop the node. You then set Parm #3=0 and lock in the desired neighbor nodes at quality=203 using the locked ROUTES command R 0 <callsign> + 203.

Note: Your initial parm #3 must be at least equal to or greater than the minimum auto update quality (Parm #2) for the route to be automatically added to the Route list.

D/ HDLC default quality for gateway ports. This value must be determined by the sysop such that the gateway port can fit into the neighboring network as well as being accessible to the NEDA-compliant network. 82 is a good value to burn into the EPROM. No matter what you have the HDLC quality set to, the nodes that the gateway hears over the radio will not be broadcast over the RS-232 port because the minimum obsolescence to broadcast (parm #6) is set higher that the initial obsolescence. Do not lock in any nodes at >50 quality.

E/ Persistence for Hidden Transmitter Free Multiway, Gateway and Non-Ideal user port. This value must be calculated based on the intended aggressiveness of the port and the number of transmitters on the frequency. Generally it is calculated as = 256/(N-1) where N is the maximum number of transmitters on the channel.

F/ FRACK time for a gateway node. This must follow whatever standards are being used by the rest of the stations on the radio channel.

G/ MAXFRAME on user ports. To allow users an equal share of network access, the maximum node transmission to a user should not exceed two seconds. This corresponds to MAXFRAME=1 at 1200 bps, MAXFRAME=3 at 4800 bps and MAXFRAME=4 or 6 at 9600 bps data rates on the user ports. MAXFRAME on dedicated network links is a controversial issue and until this can be resolved through experimental research, NEDA continues to recommend network MAXFRAME=1.

H/ Transmit Keyup delay (TXD) for Dedicated point-to-point link, HTS free backbone and gateway. This should be experimentally determined for each system and set to 1.25 times the lowest value that works.

I/ Crosslink node broadcast interval. To prevent all the nodes on a node stack from trying to broadcast simultaneously, Mode #8 should be set to a randomly selected number between 400 and 450 seconds.

J/ These parameters do not affect the network. Set them according to your needs.

K/ Slime Trail Control Mode #16

Slime Trail Control is made up of two bits. Bit#0=(1) controls the display of slime trails in the node list. Bit#1=(2) forces the node to ignore slime trails. It has been observed that if both of these bits are set (ie Mode#16=3) then Bit 0 overrides Bit 1 and the effect is equivalent to setting Mode#16=1. If your intention is for the node to ignore slime trails, then you must enter Mode#16=2

If operating a BPQ switch with an application (BBS or DXCluster) on a network with the slime trail control enabled, it is important that the application first connect to the BPQ switch and then connect from there to a nearby visible node in the network. The application usually will be set with reduced quality to limit its node propagation to the immediate region. The lack of slime trails will prevent direct connections from the application to more distant parts of the network. Certain applications (such as FBB BBS's) will force the BPQ to use the application callsign instead of the BPQ callsign in its L4 connections out into the network. Connecting first to the BPQ switch and then to a nearby visible node will avoid this problem.

L/ Alternate Nodes Broadcast Algorithm Port Control

In the X1J documentation, the author noted that "it made little sense to use it on the HDLC port but what the heck, it is included for completeness. The only settings that made sense are 0 and 2.....Setting it to 1 or 3 will result in some pretty weird effects." We theorized that the alternate algorithm would be useful on any radio port that was SHARED. At first we tried it on a digital repeater node radio port in a backbone and it worked fine. There were no ill effects observed and it solved the problem of multiple trivial routes generated in the repeater environment. Later we also tried the alternate algorithm on a regular Node radio port and did not observe any ill effects. So while it would not seem to enhance a LAN or dedicated port, it does no harm and it does help a shared port. Therefore we recommend setting Mode#9=3 for all ports.

Board Meeting Notice

The May 2, 1999 NEDA Board Meeting will be held in northern NJ just off of the Garden State Parkway. Contact Bob Anderson, K2BJG@WA2SNA.NJ for more information and to RSVP. Alternatively, contact Don Rotolo, N2IRZ@compuserve.com.

If you did not get a meeting notice via packet or e-mail a few weeks ago, make sure your information is correct in the roster. The invite was sent to all voting members whose expiration date was after February 1999. The invitations were sent out based on a database listing generated on April 1, 1999.

—NEDA

NEDA World Wide Web Home Page address

URL = http://www.cam.org/~burt/neda/neda.html

Attendees at the Depot Restaurant Board of Directors Meeting

The NEDA Quarterly is an official publication of the North East Digital Association. This document is published after each Board meeting, generally three times per year. The Quarterly contains the Minutes of Board meetings, a Membership Roster, and other business matters of the Association as well as articles and information pertinent to the construction of Amateur Radio packet networks.

NEDA is a nonprofit association formed for the purpose of promoting free-access general-purpose amateur radio packet networking. Paid membership at the time of this publication was approximately 150, and over 250 copies were distributed.

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